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ABSTRACT

Using a battery of tests developed by Educational Testing Service, New Jersey public school students were tested in grades four, seven, ten and twelve for their mastery of selected reading and mathematics skills. The percent of correct answers for each item, and evaluative comments are presented in terms of the total population tested; community type; and district factor groupings such as educational level of adults, occupation, mobility, density, urbanization, income, unemployment, and poverty. The data collected through the Educational Assessment Program (EAP) is used in the planning and evaluation of educational programs through the identification of local school districts that have programs which are either exceptional or particularly in need of assistance. Further, the EAP is designed to assess the status of New Jersey's educational system relative to the statewide goals adopted by the State Board of Education. (BW)

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EDUCATIONAL ASSESSMENT PROGRAM

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The attached publication is the 1975-76 Educational Assessment Program State Report which is a record of the findings regarding the mastery level of basic skills in reading and mathematics by fourth, seventh, tenth and twelfth grade students throughout New Jersey. This booklet provides information on the present educational processes in New Jersey.

Further questions may be directed to:

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Sincerely,
Mary Ann Wilmer
Mary Ann Wilmer
Director
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Attachment

EDUCATIONAL ASSESSMENT PROGRAM

STATE REPORT

1975-1976

1776

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EVALUATION FORM

FOREWORD

I am most pleased to present the Fourth Annual Report of the New Jersey Educational Assessment Program. The report contains significant information regarding the mastery of basic skills by elementary and secondary school students throughout New Jersey. Hence, it deserves careful study by all citizens concerned with public education.

The Department of Education is continuing to develop more effective ways to provide assessment findings to educators and parents. For the first time this year, the Department provided school districts with individual student report forms which included both reading and mathematics test scores. This in turn enabled educators to furnish parents with specific measures of their child's strengths and weaknesses in the acquisition of basic reading, and mathematics skills. The Department also collected and disseminated short narratives from districts throughout the state which disclosed how the assessment data can be profitably used in planning educational programs. The publication, "Guess What I Did With the State Test Results!", is available from the Department.

The 1975-76 Statewide Test Results indicate that New Jersey school students still do not demonstrate complete mastery of the basic skills. However, a comparison between scores reported this year and years past suggests that many children in our public schools are improving their skills mastery. Progress can be noted in the following areas:

> The typical fourth grade student in our state has improved his/her mastery level of the objectives measured by the Educational Assessment Program reading tests between 1972 and 1975.
>
> Children between grades seven and ten appear to be maintaining their mastery level in the basic skills area between 1974 and 1975.
>
> Children between grades ten and twelve appear to be improving their mastery level of objectives measured by the 1975 Educational Assessment Program mathematics test.

Important discrepancies in achievement remain. For instance, comparison of test scores between 1972 and 1975 also indicated that children experienced a drop in their basic skills mastery between the fourth and the seventh grades. The sharp disparity in mastery levels of children from differing socio-economic background persists. Continued educational improvement is needed to correct these specific deficiencies and to improve the overall basic skills mastery level of our children.

I hope that this report, along with school and student data which has been made available to educators and parents, will prove useful in planning for the improvement of instruction in our schools.

Fred G Burke

Fred G. Burke
Commissioner

PREFACE

We are entering an era of identifying goals and needs, designing programs to meet these needs and implementing and evaluating these programs in a constant and consistent attempt to provide better educational services to all populations of students. The heart of such a system is information. Without information we could not establish goals or move effectively toward any other part of our system. Assessment is the collection of information. The system, as a whole, is called "evaluation". Evaluation is defined as the collection of information for use in making decisions about educational programs. The test scores presented here are the result of assessment and are part of the decision making process. Decision makers on all levels will find these scores useful. These same decision makers will realize that a host of other information is needed; information collected by other assessment procedures which may be less formal. The decision maker who relies only on these scores will make decisions upon an inadequate knowledge base. The decision maker who ignores these scores completely will do the same. Within this system, the freedom to choose among the myriad of educational process paths remains with the local school district. The scores, although the result of a state level assessment program, provide information to local districts in a way which optimizes local decisions.

Minimum Standards and the Educational Assessment Program

At this writing, the New Jersey Administrative Code (6:8-3.8) requires that each local district establish local minimum proficiency levels and standards, assess each student's status relative to these standards annually, and provide remedial programs to those students who do not meet the standards. Assembly Bill 1736 would require uniform standards statewide which would trigger the remediation. Whether standards are set locally or uniformly throughout the state, the determination of the special needs of all students is essential if public education is to serve all of the public equally. The Educational Assessment Program, while committed to this end since its inception, may or may not be the vehicle for triggering remediation. No determination has been made at this time. We may debate the Programs' efficacy in this regard. However, we must not debate our commitment to making equal educational opportunity closer to reality. The words of Chief Joseph of the Nez Perce tribe speak as well for the educationally disadvantaged today as they did for the politically disadvantaged Indians in 1879:

> ...I do not understand why nothing is done for my people. I have heard talk and talk but nothing is done. Good words do not last long until they amount to something....
>
> ...I am tired of talk that comes to nothing. It makes my heart sick when I remember all the good words and all the broken promises. There has been too much talking by men who had no right to talk. Too many misinterpretations have been made; too many misunderstandings have come up between the white men about the Indians.
>
> ...Treat all men alike. Give them all the same law. Give them all an even chance to live and grow.
>
> ...Let me be a free man - ... free to think and talk and act for myself - and I will obey every law or submit to the penalty.

The freedom Joseph sought as a result of equal opportunity which would have permitted people to grow individually and make positive contributions to the welfare of the entire group was denied to him and the Nez Perce - a loss for the larger society as well. Chapter 212 provides us the opportunity to act with greater wisdom. Carpe diem.

Gordon Ascher

Gordon Ascher
Director
State Educational Assessment

INTRODUCTION

This is the report of the New Jersey Educational Assessment Program for 1975-1976. It presents an analysis of data to ascertain achievement levels in reading and mathematics for students enrolled in grades four, seven, ten, and twelve.

The analysis of data was performed by the State Interpretation Committee which consisted of two groups; one interpreting the reading test data, and the other interpreting the mathematics test data. This report includes narrative summaries and data interpretation tables based on the committee's findings on each of the eight tests.

Preceding the analytical portion of this report is a historical account of the Educational Assessment Program. It briefly describes the design of the program and modifications that have been implemented over the years.

We appreciate the services and assistance given by administrators, teachers, and university and college personnel in preparing this report.

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EDUCATIONAL ASSESSMENT PROGRAM

1975 - 76

PART 1

BACKGROUND

THE NEW JERSEY EDUCATIONAL ASSESSMENT PROGRAM

Background

The Educational Assessment Program (EAP) is a program undertaken by the New Jersey State Department of Education to provide information to educational decision-makers on the state and local levels concerning New Jersey's educational system.

Impetus for the program came from William T. Cahill, Governor of the State of New Jersey, who in his State of the State Address (January, 1971) expressed concern that there was "No reliable scientific data on a statewide basis to determine reading ability and reading growth" of the students enrolled in our public schools. Additional momentum for the testing of students arose from a major school funding decision, the Botter decision, which ruled that local property taxes are a discriminatory basis for school funding.

The long-range goals of the Educational Assessment Program are to assess the status of New Jersey's educational system relative to the statewide goals, which were determined by the "Our Schools" Project and adopted by the State Board of Education on April 12, 1972. The eleven "Outcome" goals pertain to individual student behaviors or attitudes desired as a result, at least in part, of formal educational experience. The nine "Process" goals describe how schools should function to provide meaningful education in New Jersey. The EAP endeavors to provide information useful in the planning and evaluation of educational programs designed to bring the New Jersey educational system closer to these statewide goals.

The program is intended to assist in identification of local school districts which have conducted programs which are especially successful and those which are particularly in need of assistance. In addition to providing local school districts with information relevant in the assessment of students' progress, the EAP provides information to local districts that will be helpful in making decisions about the allocation of resources and the design, implementation and evaluation of educational programs.

The Educational Assessment Program began in the fall of 1972 with the testing of fourth and twelfth grade students for achievement in the basic skills areas of reading and mathematics.

Test Development

Early in May 1972, the New Jersey State Department of Education issued a request for proposals for the development of tests to assess the basic skills achievement levels in reading and mathematics of fourth and twelfth grade school pupils in New Jersey.

Proposals for the first phase of the Educational Assessment Program were submitted by Educational Testing Service, Princeton, New Jersey; and California Test Bureau/McGraw Hill, Monterey, California.

On May 24, 1972, a State Department of Education committee met to review the proposals submitted for the Educational Assessment Program. Educational Testing Service, Princeton, New Jersey was selected as the contractor.

Lists of preliminary test specifications (Phase I) were drawn up by Educational

Testing Service and the Division of Curriculum and Instruction in the State Department of Education. On June 5 and 6, meetings were conducted in each of the twenty-one counties of New Jersey by the county superintendents of schools to obtain a statewide preliminary consensus on the specifications for each of the four achievement tests. Each school district was invited to send four representatives, one for each of the four tests. Each person was given the appropriate list of test specifications, a machine-scorable answer sheet, and a sheet for comments. Respondents rated each topic according to the following scale:

A. Essential to be included on the test
B. Desirable to be included
C. Acceptable to be included
D. Inappropriate and not to be included on the test

Teachers were asked to rate topics on the basis of what is actually taught rather than on the basis of which topics they thought should be taught.

A total of 1,573 responses were received.

Rating forms and comment sheets were tabulated and reviewed by Educational Testing Service. For each topic a mean rating was computed, and the topics for each test were rank ordered.

From this information Phase II specifications were prepared. The fourth grade reading test specifications and the fourth grade mathematics test specifications were mailed to all third grade teachers in New Jersey; Phase II twelfth grade reading test specifications were mailed to all high school English teachers; and Phase II specifications for the twelfth grade mathematics test were mailed to all high school mathematics teachers. These 11,090 teachers were asked to rate the specifications and to add comments on separate comment sheets, using procedures similar to those used at the county meetings. This material was then returned to Educational Testing Service. Approximately 7,950 responses were received.

The topics for each test were rank ordered on the basis of mean ratings. The responses of 6,375 teachers (57.48%), were included in this tabulation. Some responses were excluded from the tabulation, either because they were returned too late to be included, or because directions for responding were not followed.

Our seven-member committees of examiners, one committee for each of the tests, were appointed to participate in the test development. Committee membership included teachers, curriculum specialists, reading and mathematics specialists, a high school student and a college student. Members were nominated by the Division of Curriculum and Instruction in the State Department of Education, by key people in local districts, and by the state associations of mathematics teachers and reading teachers. These committees met on four occasions during July and August, 1972 to study test specifications, to review and select items, and to agree upon format and directions.

Items to meet specifications for each of the four tests (fourth grade reading and mathematics and twelfth grade reading and mathematics) were either drawn from files of existing items or were written by the staff of Educational Testing Service.

Field testing of the first drafts of the tests was conducted on July 27, 1972. Tests were administered by Educational Assessment Program staff or by staff members of Educational Testing Service. Because of the limitations of the nature and size of the samples, results of field testing were used only to check clarity of directions and format, to estimate overall difficulty level, and to judge that groups taking the test were reasonably comparable to groups on which items had been previously tested.

The drafts of the tests were reviewed by the Minority Groups Advisory Council. Members of this council are individuals who are familiar with tests and measurements practices or who are experienced in education of minority groups.

The Minority Groups Advisory Council met at Educational Testing Service on August 14 to review the four tests, item by item, for cultural or linguistic bias. The Council recommended changes in some items on the tests. Most of the recommendations were rewording of items or re-drawing of pictures to avoid unfavorable, stereotyped images of any minority group.

Test Administration

The tests were administered on November 14 and 15 to all fourth grade and all twelfth grade public school students in New Jersey. Practice tests were administered on November 9 in order to acquaint students with the format of the answer sheets and item types.

For schools which do not use grade designations, fourth grade students were defined as students who are in their fourth year of school beyond kindergarten, while twelfth grade students were defined as students who are in their twelfth year of school beyond kindergarten or who are in their last year of high school. Those students who are assigned to special education classes were excluded.

Tests were administered by classroom teachers or by other school personnel designated as test administrators by local district superintendents of schools. Training of test administrators in each district was accomplished through building coordinators who were trained by district test coordinators. Administrative aspects of the program were carried out through local district and county test coordinators. These individuals were trained at one of three area training sessions conducted by the State Department of Education and Educational Testing Service on October 11, 12, and 13, 1972.

Analysis of Data

The State Board of Education approved plans for the analysis and presentation of data. These score reports provided performance-referenced data for each item contained under broad cluster headings at the classroom, school and district levels. Summary reports utilizing the same forms were provided for each district according to its community type*, county, geographic region, and state. Similar reports were generated for the county and state levels.

For each item, scores were recorded as the per cent of students who accurately performed the skill being measured.

---

*Urban, Suburban, and Rural

Two sets of scores were provided; relevant scores and total scores. Relevant scores presented the results for districts that had indicated that the specification had been taught prior to test administration. Total scores presented the results for items regardless of whether the specification was relevant to the district's instructional program.

The presentation of the results was similar for both tests at each grade level. The 12th grade mathematics tests included five sets of results that were reported as follows: (1) Summary - The results of all students taking test, (2) Category A - Results for students who have taken NO mathematics courses since the eighth grade, (3) Category B - Results for students who have taken only mathematics courses such as general mathematics, basic mathematics, or business mathematics, (4) Category C - Results for students who have taken two years or less of college preparatory mathematics, such as algebra and geometry, and (5) Category D - Results for students who have taken more than two years of college preparatory mathematics.

Desired mastery levels for specific skills were ascertained by asking two questions:

(1) To what degree have the stated specifications be achieved?
(2) Is the achievement comparable to that of representative groups?

Educational Assessment Program staff provided assistance to local districts and counties in conducting their analysis of data at interpretation workshops held throughout the State. In addition to the workshops, "Interpretation Guidelines" booklets and "Item Specification and Questions" booklets were supplied to the interpreters to guide them in the interpretation procedures. Interpretation tasks included reviewing the data and identifying the strengths and needs according to individual specifications and clusters. These data interpretations were then submitted to the Commissioner of Education for approval and, after approval, were publicly released.

Program Changes

The 1973-1974 test was developed by Harcourt Brace Jovanovich and differed from the 1972-1973 test in two ways. First, the grades tested were changed from the fourth, and twelfth to fourth, seventh and tenth. These three grades were selected as a result of a survey among local districts. Second, the scores which in 1972-1973 had been reported as far down as the classroom level were now reported at the level of the individual student.

The 1974-1975 tests were developed by Educational Testing Service and differed from the 1973-1974 test in five ways: First, the Community Types categories (previously reported by urban, suburban and rural classifications), were found to be too broad and did not appropriately describe the configuration of many communities and school districts. Consequently, classifications were expanded to report two different types of urban communities, two different types of suburban communities and three different types of rural communities. These classifications were validated with each district through its county office. The definitions of the Community Types follows:

1 - **Urban Center (UC)** - densely populated with extensive development.

2 - **Urban-Suburban (US)** - near an urban center but not as highly developed, with larger residential areas.

4 - **Suburban (S)** - Predominantly single family residential within a short distance of an urban area.

5 - **Suburban-Rural (SR)** - rapidly developing area, but still large tracts of open land available for development.

6 - **Rural (R)** - scattered small communities and isolated single-family dwellings.

7 - **Rural Center (RC)** - high density core area with surrounding rural municipalities.

8 - **Rural Center Rural (RCR)** - small developed core area surrounded by rural areas.

9 - **Vocational (V)** - primary emphasis on vocational training under a separate educational jurisdiction.

O - **Regional District (R)** - an educational jurisdiction established to service several surrounding communities.

SOURCE *New Jersey Municipal Profiles: Intensity of Urbanization, New Jersey Department of Community Affiars, PT-6, January, 1972.*

Second, the geographic region results were found to be of little value. These scores were therefore eliminated and replaced by a district factor score which is based on social and economic variables derived from a factor analysis of census data.

Data from the 1970 United States Census Survey were used to develop the District Factor Groupings (DFG) for the Phase II interpretations. These groupings replace the four geographical quadrants which were used in reporting the results for 1972 and 1973.

To obtain a measure of the socio-economic background of the school districts in New Jersey, a factor analysis was performed on a series of 1970 census variables known to contribute to a district's socio-economic background status.

Factor analysis is a statistical method by which the pattern of relationships between a set of variables may be analyzed to determine a small number of independent, underlying dimensions (or factors) to account for the observed relationships among a set of variables.

The type of factor analysis used for this study was an iterative principle component analysis with a varimas rotation.

There were eight variables, which measure the many facets of socio-economic status, used in the factor analysis. The following variables were used to determine a district's socio-economic status:

1. Education - The Education level of males and females 25 years and older.

   A. no. school years completed (include nursery and kindergarten) (1)

   B. 1-4 years elementary (2)

   C. 5-6 years elementary (3)

   D. 7 years elementary (4)

E.	8 years elementary	(5)
F.	1-3 years high school	(6)
G.	4 years high school	(7)
H.	1-3 years college	(8)
I.	4 years college	(9)
J.	5 or more years college	(10)

2. Occupation - the National Opinion Research Center (NORC) in 1947 undertook a study to determine the prestige with which occupations were viewed. In 1961, A.J. Reiss (Occupation and Social Status; Free Press, 1961) updated the NORC work. The major occupations determined by averaging the prestige rankings of the occupations comprising each category. The categories (ranked from high to low) were as follows:

A.	Old and New Professionals	(11)
B.	Managers, officials, and proprietors	(10)
C.	Quasi-professionals	(9)
D.	Craftsman, Foreman, and Kindred Workers	(8)
E.	Clerical and Kindred Workers	(7)
F.	Sales Workers	(6)
G.	Protective Service Workers	(5)
H.	Operatives and Kindred Workers	(4)
I.	Farm Workers	(3)
J.	Service Workers (except private and protective)	(2)
K.	Laborers	(1)

3. Mobility - percent of persons living in the same housing unit for at least the past ten years.
4. Density - number of people per housing unit.
5. Urbanization - percent urban population of the district.
6. Income - average family income.
7. Unemployment - percent of experienced unemployed males and females sixteen years and older.
8. Poverty - percent of families below the poverty level.

The factor analysis determined two significant factors or dimensions of the ten variables. Based on the interpretation of the significant factors, the first factor was determined to be a factor measuring socio-economic status.

Based on the socio-economic factor, a factor score was generated for each of the school districts included in the analysis. The districts were then ranked according to their factor score and cut-points were established to divide the districts into ten District Factor Groups. The cut-points were determined so that all District Factor Groups would be comprised of approximately the same number of school districts.

The ten District Factor Groups were labeled from A to J with J containing those districts with the highest factor scores.

No school district census information was available for school districts with a student enrollment of less than 300; these school districts were excluded from the analysis. These school districts were placed in a District Factor Group called Z. Vocational-Technical schools were placed in a separate category called V.

The relative importance of the eight variables in the composition of the factor is:

Educational Background of the District	27.82%
Occupational Background of the District	24.17%
Per Capita Income of the District	19.26%
Percent Poverty Level	13.32%
Unemployment Rate	10.38%
Population Density	4.19%
Degree of Urbanization	0.83%
Population Mobility	0.03%

The third change in the 1974-75 tests occurred in tenth grade mathematics. The D Category was eliminated and the C category was changed to read: Results for students who have taken college preparatory mathematics such as algebra and geometry.

The fourth change was made in the reporting codes and the fifth change in relevancy notations. Additional reporting codes were provided for local classroom data. This enabled districts to group their students in such a way that the results had maximum use for local purposes. At the seventh grade level, districts and/or schools were permitted to assign two different class codes, a Reading Class Code and a Mathematics Class Code. The additional class code assured two reports for each student and a separate class report for the reading teacher and the mathematics teacher. In addition to the mathematics background codes, reports were generated for special groupings of students at the tenth grade level. This allowed provision of class reports based on local criteria.

Test results of previous years reported relevancy according to mastery or non-mastery of the skill as determined by a general expectation for students tested within the grade. Although the data was collected in the same manner, relevancy notations were determined by expectations of mastery or non-mastery of a skill for fifty percent or more of the students having learned the skill.

Educational Testing Service developed the 1975-76 test.

In the development of the 1975-76 tests Educational Testing Services incorporated the following changes:

1) Every third year, the specifications or objectives are reviewed in order that the tests will remain current and valid. This review was undertaken by a committee of subject matter specialists and their deliberations were then rated in a survey of all reading and mathematics teachers throughout the state in the appropriate grade levels.

2) The procedures for field testing were greatly expanded to draw from a wider sample of the state and to increase the number of students tested.

3) As an outgrowth of the re-validation process, the item and cluster balance was reviewed. This process resulted in stronger and more reliable tests.

4) Both individual student reports and class rosters were produced. The individual student report provided data on the student's performance for both the reading test and the mathematics test. All information regarding description of the test items as well as, explanation of the symbols used for scoring responses to the items was included in the report. The class roster consisted of two reports showing the performance by each student on every test question. One class roster report presented an alphabetical listing of students and their performance on the reading test; the other report presented student performance on the mathematics test.

5) The reporting of mathematics achievement for students enrolled in grades ten and twelve no longer utilized the A, B, C, or D categories. Instead, scores were reported according to calssroom codes that were locally assigned to the various mathematics groups tested.

6) Districts were given the option of testing special education (classified students) who had been exempted from testing in the past. If districts elected to use this option special education students' tests were scored but their scores were not included in the summary reports.

7) In the past, relevancy notations were used to indicate whether the specification was taught prior to test administration. Last year, the determination of specification relevancy was based upon the skill having been taught to fifty percent or more of the student's enrolled in the designated grade.

   As decisions made at the district level frequently differed from actual practices occurring in the schools and/or classrooms, problems were encountered in interpreting student achievement at these more discrete level was unreasonable; therefore, relevancy notations and relevant scores were eliminated from the pre-printed data forms for the 1975-76 testing program.

Determination of specification relevancy was conducted during the interpretation of the score achieved on each item at the various levels (district, school, and classroom.) The concluding judgement regarding relevancy was then recorded on each interpreted report at the appropriate levels.

8) The District Factor Grouping (DFG) classifications were refined and improved to better account for educational achievement. These new classifications were validated through a survey of the districts.

Other efforts in the Assessment Program will be geared toward providing test instruments and procedures to assess other goal areas, providing technical assistance to districts developing their own programs, and providing in-depth studies of success-related programs and elements. This latter component will investigate, from a case-study perspective, programs which work within particular environments and conditions.

EDUCATIONAL ASSESSMENT PROGRAM
1975 - 76
PART II

NARRATIVE SUMMARIES

READING ASSESSMENT - 1975-1976
FOR
GRADES FOUR, SEVEN AND TEN

General Statement

The 1975-1976 Educational Assessment Program reading tests assessed those reading skills identified by teachers as having been taught by the time students enter grade four, grade seven, grade ten or grade twelve.

The areas measured in the fourth grade test were partioned into seven clusters. They included a) Vocabulary, b) Phonetic Analysis, c) Structural Analysis, d) Application, e) Literal Comprehension, f) Interpretation, and g) Study Skills. A total of 95 items was included in the test with a range of 10 to 28 items contained within each cluster.

The seventh grade test included seven clusters, identified as a) Phonetic Analysis, b) Structural Analysis, c) Word Usage, d) Literal Comprehension, e) Organization, f) Interpretation, and g) Study Skills. The number of tiems contained in a cluster ranged from 8 to 24 with the entire test totaling 90 items.

Items constructed for the tenth grade and twelfth grade tests were divided into three clusters: a) Word Recognition, b) Reading Comprehension, and c) Study Skills. The test totaled 80 items with a range of 20 to 38 items included in a cluster.

The test data was analyzed according to three group classifications: state, Community Types and District Factor Groups. The interpretation was conducted by item analysis to denote the strengths and weaknesses evidenced in the skills that were measured. The terms used to describe student performance on the test items were:

Very satisfactory: a high degree of proficiency in view of the difficulty of the item.

Satisfactory: proficiency in view of the difficulty of the item.

Marginally satisfactory: minimally acceptable degree of performance.

Unsatisfactory: lower than marginal performance and suggests a need for review or additional instruction.

Poor: very low degree of performance and suggests a need for emphasis or concentrated instruction.

Throughout the interpretation of data, consideration was given to two variables: One, the wide range of achievement levels present within grades and two, the variation of instructional goals and/or methods that exist in districts and schools.

FOURTH GRADE READING

Fourth grade students demonstrated generally satisfactory achievement in word recognition, word analysis, and certain types of interpretation of written material. Although overall performance in the *literal comprehension* and *study skills* clusters was marginally satisfactory, specific weaknesses were found. The marginally satisfactory rating given to these areas indicated deficiencies that need further attention.

BASIC SIGHT VOCABULARY

The performance in this cluster, which consisted of a sample of high frequency words, was very satisfactory. Students demonstrated the ability to identify the visual representation of the spoken word.

PHONETIC ANALYSIS

Students generally performed satisfactorily when required to find the word having the same sound as the designated sound of the clue word. Strengths were exhibited in the sound identification of short and long vowels, vowel digraphs, initial consonants, consonant blends and digraphs, and the variant sounds of "c" and "g."

STRUCTURAL ANALYSIS

Performance in the recognition and usage of structural units within words was generally satisfactory. Students demonstrated ability to separate the root word from its prefix or suffix, apply meaning to both prefixes and contractions, and identify compound words. Students were also able to determine the number of syllables contained in a spoken word and to identify the correct division (syllabication) of a printed word.

APPLICATION

Satisfactory to very satisfactory performance was achieved in this cluster which included context clues (using the context of a sentence to find a word and meaning of a word), synonyms (noting words with similar meaning), and antonyms (noting words with opposite meanings). Of the three skills tested, students achieved the highest score on the items measuring knowledge of antonyms.

LITERAL COMPREHENSION

Students demonstrated ability to extract the main idea from written materials. They were less able to determine the order and sequence of events that occurred in the passage or to recall directly stated information contained within the passage.

INTERPRETATION

Students exhibited satisfactory ability to interpret material read. The following skills, interpreting character's motives and distinguishing between fact and fiction, were those that resulted in satisfactory performance. Poor performance was evidenced in the skill predicting outcomes which indicated a need for improving skills related to critical and creative reading.

STUDY SKILLS

Proficiency in applying *study skills* reflected wide differences. Alphabetic sequence skills were generally satisfactory; however, there were manifest weaknesses in using dictionary guide words. Problems were also encountered when students were required to find the definition of a word through the use of a glossary. Performance on items measuring ability to use a table of contents was inconsistent.

COMMUNITY TYPE COMPARISONS

When performances attained in the various Community Types were compared, the differences were not consistently large. The pattern of achievement that emerged tended to be predominant throughout the test with communities scoring similarly and grouped as follows: regional, suburban; urban-suburban, suburban-rural, rural; rural center, rural center rural; and urban center.

All Community Types achieved very satisfactory ratings on recognition of *basic sight vocabulary*. Performances were extremely close in range except for one item wherein a nine percentage point difference existed between suburban, the highest scoring districts and urban centers, the districts receiving the lowest score.

Overall performance in the *phonetic analysis* cluster was considered satisfactory. Specific strengths were noted in the ability to identify consonant sounds in both initial and final position. Very satisfactory ratings were achieved by all Community Types with the exception of urban areas which achieved satisfactory results. Other strengths were noted in identification of consonant blends and digraphs; long vowel sounds, and vowel digraphs. Regional and suburban communities performance boarded on very satisfactory, while other communities, except for urban centers performed satisfactorily. Urban centers achieved marginally satisfactory performance on vowel digraphs, consonant blends, and consonant digraphs but unsatisfactory performance on recognition of long vowel sounds. Measures of abilities to identify the short vowel sounds contained in words found urban centers performing marginally satisfactorily while all other Community Types performed satisfactorily. Similar performance was noted on items measuring proficiency in the recognition of vowel diphthongs. The observed difference occurred in the urban centers which demonstrated weaknesses in this skill. Score disparities were more defined in the areas of silent consonants and knowledge of variant sounds of letters. Inadequacies resulted for rural center rural districts which performed marginally satisfactory and urban centers which achieved unsatisfactory performance on identification of silent consonants while other Community Types performed satisfactorily. Marginally satisfactory scores were also achieved by rural center rural and rural center on recognition of variant sounds whereas other communities, namely regional, suburban, suburban-rural and rural only performed satisfactorily. Unsatisfactory results were achieved in urban centers.

In the cluster *structural analysis*, the regional and suburban communities evidenced very satisfactory achievement on items assessing knowledge of syllabication principles. Satisfactory performance was demonstrated by all other communities except for urban centers, wherein marginally satisfactory performance resulted. Weaknesses were observed for all Community Types on items measuring the ability to recognize the plural form of words. Specifically, the highest achievement was rated marginally satisfactory and occurred in the regional, suburban and suburban-rural communities. Rural districts scored unsatisfactorily on plurals and the remaining communities, rural centers, rural center rural and urban centers evidenced extreme deficiencies. Overall satisfactory performance was achieved by all Community Types on the *structural analysis* skills, roots, prefixes, compound words and contractions, with the exception of urban centers where results were marginally satisfactory for contractions and unsatisfactory on the other skills.

Analysis of scores in *word recognition and application* revealed that achievement in this cluster closely paralleled that observed in the *basic sight vocabulary* cluster. All but rural center, rural center rural and urban communities achieved very satisfactory performance on at least one of the three skills measured in this cluster.

In the area of context clues, very satisfactory ratings were achieved by regional, suburban and suburban-rural communities. Urban-suburban boarded on very satisfactory achievement while rural center, rural center rural and urban centers performed satisfactorily. Performance on synonyms resulted in regional, suburban, urban-suburban, suburban-rural and rural achieving very satisfactory scores; scores in rural center and rural center rural communities boardering a very satisfactory rating; and urban centers performing satisfactorily. Regional, suburban, urban-suburban and suburban-rural districts achieved scores very close in range on usage of antonyms; they were rated very satisfactory and boardering very satisfactory, respectively. Satisfactory scores were achieved in rural center and rural center rural Community Types. Urban centers achieved marginally satisfactory scores.

The most depressed scores were observed in the *literal comprehension* cluster. All but urban center Community Types attained satisfactory scores in the skill identifying main ideas; the urban districts performed marginally satisfactorily. Lesser proficiency was noted on the ability to identify information that was contained in a reading passage. Satisfactory achievement resulted in regional, suburban, urban-suburban, suburban-rural and rural communities. Morever, rural center and rural center rural communities achieved marginally satisfactory achievement while urban centers achieved unsatisfactory results. The more pronounced deficiencies occurred in measures of chronological order and sequence of events. The highest rating in this cluster, marginally satisfactory, was achieved by regional, suburban, urban-suburban and suburban-rural communities. Performance in rural center and rural center rural districts was unsatisfactory and in urban centers, poor.

In the *interpretation* cluster, all Community Types received satisfactory ratings on skills assessing the ability to interpret emotions and determine character's motives. As more sophisticated skills were measured, the level of achievement among the various communities resulted in mixed performance. Specifically, on items addressed to the determination of fact/fiction, rural center and rural center rural types attained marginally satisfactory scores, urban center scores were unsatisfactory, and all others were deemed satisfactory. Likewise, in predicting outcomes, urban-suburban, suburban-rural, rural, rural center, and rural center rural types performed unsatisfactorily. Urban centers had poor scores while regional and suburban communities performed satisfactorily.

Mixed results were also noted in the *study skills* cluster with higher levels of proficiencies observed on items relating to alphabetic sequence. All Community Types demonstrated satisfactory performance with the exception of regional, suburban, and suburban-rural districts, which performed very satisfactorily. In the usage of dictionary guide words, all communities had satisfactory ratings except for urban centers which only had marginally satisfactory scores. Highest proficiency was evidenced by regional and suburban type districts in the usage of a glossary with urban-suburban, suburban-rural and rural communities evidencing slightly lesser proficiency. Rural center, rural center rural and urban districts received unsatisfactory and poor ratings, respectively. Finally, scores attained in the usage of a table of contents followed a similar pattern except that regional and suburban communities performed only marginally satisfactorily.

DISTRICT FACTOR GROUP COMPARISONS

Comparisons of groupings formulated on socio-economic factors indicated progressively higher achievement from the lower socio-economic levels to the higher in all clusters measured. Performance on *basic sight vocabulary* was satisfactory to very satisfactory for the lowest socio-economic level and very satisfactory for all other levels. Differences in *phonetic analysis* skills were generally greater than they were on sight vocabulary with the lowest socio-economic group achieving minimally satisfactory or unsatisfactory scores on specific items measuring long and short vowels, vowel digraphs and diphthongs. Ability to identify initial and final consonants, and consonant blends and digraphs was satisfactory or above for all socio-economic groups. Identification of silent consonants was generally poor for all socio-economic groups with the lowest socio-economic groups scoring less than 50% on two items.

On measurement of *structural analysis*, where upper socio-economic groups performed very satisfactory, the lowest groups generally demonstrated satisfactory performance. On items where upper socio-economic groups achieved satisfactory scores, the lowest socio-economic levels achieved minimally satisfactory to satisfactory performance.

On measures of word recognition *application*, use of context clues, and identification of synonyms and antonyms, upper socio-economic levels generally achieved very satisfactory ratings with results dropping into the average range for 50% of the items in Group B and all but two of the twelve items in Group A. The largest differences between upper and lower socio-economic groups were noted in performance on the measures of order and sequence, identification of main ideas and specific information. On these items, where upper socio-economic levels achieved very satisfactory ratings, lower socio-economic groups performances dropped to satisfactory on some items, minimally satisfactory or unsatisfactory on other items. In interpreting material, determining motives, differentiating fact or fiction, and interpreting emotions, the two top socio-economic groups achieved percentages of accuracy classified as very satisfactory for most items, while the middle socio-economic groups (C-H) achieved satisfactory performance on most items, and the lowest socio-economic groups performances were generally minimally satisfactory to unsatisfactory.

In the *study skills* cluster, all socio-economic groups performed satisfactorily or very satisfactorily on alphabetic sequencing (only Group A dropped below very satisfactory). In using guide words and glossaries, no group achieved a rating of very satisfactory. Upper socio-economic groups achieved at a satisfactory or minimally satisfactory rating on these skills while the two lowest socio-economic groups predominantly achieved unsatisfactory ratings.

SEVENTH GRADE READING

The performance of seventh graders on the 1975-76 reading test was generally unsatisfactory. Only two of the six clusters yielded satisfactory results, while the remaining four ranged from poor to minimally satisfactory.

PHONETIC ANALYSIS

Students' performance in the *phonetic analysis* cluster was considered to be marginally satisfactory. Although satisfactory performance was observed in the ability to identify consonant sounds, there were weaknesses in the ability to decode blends and digraphs. Performance on vowel sounds was inconsistent; however, an increased number of items would be necessary to more accurately assess skills in this area.

STRUCTURAL ANALYSIS

Performance in this cluster was generally satisfactory. Students' ability to select the correct syllabication of a given word in context was rated very satisfactory. Unsatisfactory to poor performance was achieved on the selection of the meaning of the contracted form of a word and the selection of a word containing a suffix to match a given contextual meaning. Students performed poorly on the item measuring knowledge of prefixes which required matching of a word to the given context.

WORD USAGE

The performance of students was deemed satisfactory in the usage of synonyms and antonyms. Marginally satisfactory achievement was observed in the multiple meanings of selected words as they were used in context. A pattern existed in the choice of incorrect responses which may be indicative of poor reading habits. Upon examining the incorrect distractors that received a high percentage of responses (10 percent or more), it was discovered that they contained words or phrases that related to information that quite consistently fell in specific locations within the selection. These were as follows: the opening sentence, the closing sentence, the final sentence of the opening paragraph, and the first sentence of the final paragraph. This may be evident of a trend toward scanning, skimming, or speed reading rather than thorough reading.

LITERAL COMPREHENSION

Performance on items contained within the *literal comprehension* cluster was generally satisfactory. Percentages achieved on the skills tested revealed that students are more proficient in using contextual clues than in locating information. Scores attained in usage of contextual clues ranged from satisfactory to marginally satisfactory, while abilities in locating information ranged from satisfactory to poor.

ORGANIZATION

Unsatisfactory performance was achieved when students were required to recall the main idea of a passage by selecting the best statement which summarized the context. Weaknesses were also evidenced in the recall of information relating to the chronological order of events presented in the passage.

INTERPRETATION

Generally, unsatisfactory performance was noted in this cluster. Inadequacies were noted in all areas; namely, character interpretation, drawing inferences, prediction of outcome, fact, fiction, opinion, and interpretation of illustrative materials.

STUDY SKILLS

Strength in *study skills* was noted only in alphabetizing. Performance in all other areas was marginally satisfactory to poor, with glaring weaknesses noted in the ability to follow directions, and general weaknesses observed in dictionary skills, library skills, use of the glossary, table of contents, and index. In view of the simplicity of the items in this cluster, better performance should have been evidenced.

COMMUNITY TYPE COMPARISONS

When comparisons were made between scores of varied Community Types, suburban students acheived consistently higher percentages of accuracy than any other group. Although differences between varied Community Types were slight, when the suburban scores were compared to the urban scores, there was a wider disparity of acheivement. Generally, scores varied only slightly for groups identified as suburban, suburban-rural, rural, rural center, rural center rural, regional, vocational, and urban-suburban. When these groups acheived very satisfactory ratings, urban groups generally acheived satisfactory ratings. When all other groups received satisfactory ratings, the urban acheivement was only minimally satisfactory.

In *phonetic analysis* (short and long vowels, single consonants, consonant blends and digraphs, vowel digraphs and diphthongs, and silent consonants), all scores ranged from satisfactory to poor, dependent upon item difficulty as well as group differences. Specifically, skills in using phonetic cues ranged from satisfactory to minimally satisfactory to poor for urban students.

In *structural analysis*, suburban students, performance ranged from very satisfactory on syllabication/accent to minimally satisfactory on the identification of a specific suffix and prefix. Urban students' abilities to use plurals, contractions, possessives, compound words, prefixes, suffixes, roots, and syllabication/accent ranged from satisfactory to poor; weaknesses were noted in ability to identify contractions, possessives, prefixes, and suffixes. Ranges for the other Community Types closely paralleled those of the suburban group.

Ability to identify synonyms was satisfactory for all groups except the urban group, which acheived ratings of satisfactory to marginally satisfactory. Suburban students' skills in determining multiple meanings on three items ranged from very satisfactory to marginally satisfactory. Urban-suburban, suburban-rural, rural, and regional students' scores extended over the same ratings. Rural center, rural center rural, and vocational results were satisfactory to poor, as were urban scores. In using homonyms and antonyms, all groups showed some degree of weakness.

On twenty-four items measuring specific *literal comprehension* skills in the areas of context clues and location of information, the range of scores for suburban, suburban-rural and urban-suburban extended from very satisfactory to marginally satisfactory. The range of scores for regional, rural, rural center, rural center rural and vocational extended from satisfactory to unsatisfactory. The urban group's scores ranged from satisfactory to poor on several items. Generally, results on measurements of location of main ideas, and sequence of events showed weaknesses for all Community Types. However, the urban group showed extreme dificiencies.

In specific aspects of critical and creative reading, serious deficiencies were obvious in the performance of all Community Types with the greatest weakness noted on measures of the ability to draw inferences. The range of ratings for the varied community groups followed the dominant pattern indicated in the proceeding paragraph; urban results for the entire interpretation section was poor to unsatisfactory. Measured *study skills* included alphabetizing, following directions, and using a glossary, table of contents, index, dictionary and card catalog. Results for all groups indicated the need for re-teaching and reinforcing these skills. Moreover, none of the Community Types achieved very satisfactory ratings on any of the study skills.

DISTRICT FACTOR GROUP COMPARISONS

Analysis of the results of socio-economic groups, identified on the basis of eight variables, showed that item difficulty accounted for differences within the groups. Gross differences in scores occurred between the highest socio-economic group and the lowest socio-economic group.

In *phonetic analysis*, the lower socio-economic groups showed many weaknesses especially in the usage of specific long and short vowels, and consonant blends and digraphs. In *structural analysis*, all socio-economic groups achieved a rating of satisfactory or better on identification of compound words, syllabication/accent, and use of plurals. All groups except the lowest socio-economic groups performed satisfactorily on identification of root words. Varying degrees of weaknesses were evidenced in the use of contractions, possessives, prefixes, and suffixes.

For all factor groups, measurement of word-usage, multiple meanings, synonyms, homonyms, and antonyms produced results which ranged from very satisfactory to unsatisfactory depending upon the item. The lowest socio-economic group consistently achieved lower scores for all items and the highest socio-economic group consistently achieved higher scores.

Within the *literal comprehension* cluster, item difficulty accounted for large differences in performance within a particular socio-economic group on skills assessing the usage of context clues and location of information. Generally, percentage scores ranged upward as socio-economic status advanced to higher levels.

All factor groups showed varying degrees of weaknesses indicating the need for reinforcement of skills such as determining main ideas and sequence of events. Results also indicated the need for re-teaching and reinforcing skills in character interpretation, differentiating facts from opinions, drawing inferences, predicting outcomes, and interpreting illustrative materials.

Generally, *study skills* were weak with the exception of alphabetizing where all factor groups achieved satisfactory results. Lower socio-economic groups were consistently weaker in measures of following directions, dictionary skills, library skills, using tables of contents and indices. However, all factor groups, including the highest socio-economic group, evidenced areas of deficiency.

TENTH GRADE READING

Tenth grade students showed mixed performance on the reading skills that were measured in the 1975-76 test. While satisfactory performance was observed on *word recognition and study skills*, students' performance on *reading comprehension* ranged from marginally satisfactory to poor. Weaknesses were observed in most of the skills involved in *reading comprehension*. The fact that performance in the verbal area, as measured by categories of synonyms, antonyms, analogies, and context clues, was only satisfactory, undoubtedly contributed to the generally inadequate results of *reading comprehension*.

WORD RECOGNITION

Overall performance in the area of *word recognition* was satisfactory especially in the usage of context clues and antonyms. Inconsistent and at times inadequate performance was evidenced in the identification of words using as aides synonyms and analogies.

READING COMPREHENSION

Performance of tenth graders in the area of comprehension was barely adequate in any skill area other than that of being able to follow a sequence of events. Even here, the performance was considered only satisfactory. Gross weaknesses were observed in the areas of finding the main idea, making inferences, drawing conclusions, recognizing tone, applying information, and finding support for conclusions through supporting details. A concomitant suggestion was evident that tenth graders do not seem to apply either literal or interpretive skills when reading to extract meaning from that which is read.

STUDY SKILLS

Performance in the ability to use varied resource material was generally satisfactory. While particular strengths were noted in students' ability to read charts, glaring weaknesses were observed on items measuring card catalogue skills. Inconsistent performance was found on items measuring index and reference book skills.

COMMUNITY TYPE COMPARISONS

Word recognition was tested through the use of synonyms, antonyms, analogies, and in the use of context clues. Regional and suburban Community Types ranked highest in the number of items rated satisfactory or above. Urban center and vocational types ranked lowest in the numbers of items rated satisfactory. Differences existing within the suburban groups and rural groups were negligible. It should be noted that the overall performance of all groups tested indicated the need for increased instructional emphasis in the areas of *word recognition*. Item difficulty in nine out of twenty-two items of *word recognition* resulted in lower performance for all Community Types. Areas of greatest strength were in the recognition of antonyms and in the use of context clues. Of greatest difficulty were those items which tested the use of synonyms and analogies.

Depressed scores across all Community Types revealed extreme difficulty within all areas of *comprehension*. Presenting the greatest challenge were the items requiring the application of information, drawing conclusions, recognizing tone, and identifying the main idea. The ability to recognize supporting ideas, a more literal comprehension task, was rated unsatisfactory to poor, with only three out of fourteen items rated satisfactory. Percentages for suburban group types, though rated unsatisfactory, were higher and contrasted sharply with other groups. Regional, urban-suburban, and suburban-rural, also rated unsatisfactory, performed better than rural, rural center, and rural center rural types. Differences within the two groupings above were negligible. Although percentages were lowest for urban center and vocational Community Types, performance of students in these groups was not grossly different from that of rural, rural center, and rural center rural types.

Generally, for all Community Types, performance on tasks requiring knowledge of *study skills* ranged from minimally satisfactory to poor. Item difficulties were present for one out of two items involving dictionary skills and one out of three items involving reference books. Performance on other items ranged from minimally satisfactory to satisfactory. Percentages for regional, suburban and suburban-rural types were rated minimally satisfactory and exceeded those of other groups by only a small margin. Scores of urban and vocational types closely approximated those of urban-suburban, rural, rural center, and rural center rural groups. Areas revealing greatest strengths for most Community Types were using tables of contents, reading maps, and reading charts. In these study skill areas, urban and vocational percentages were rated minimally satisfactory to satisfactory and compared very favorably with regional and suburban groups.

DISTRICT FACTOR GROUP COMPARISONS

Percentages of performance on *word recognition* skills were higher for those at higher socio-economic levels, although differences between highest and lowest economic levels seldom exceeded ten points. Larger differences appeared in the recognition of synonyms, antonyms, and analogies than those occurring in the use of context clues. Small differences occurred within and among "E-F-G" and "H-I-J" groupings which were rated minimally satisfactory to satisfactory on most items. The performance contrasted sharply with "A-B" and "V" groups whose performance was rated unsatisfactory to poor.

Percentages for all *comprehension skills* rarely exceeded the rating of minimally satisfactory. Observation of these percentages across socio-economic groups showed more variability from lowest to highest levels than that of other groups. Performance of all groups suggested the need for concentrated instruction. Throughout the assessment of *comprehension* skills, "A-B" and "V-Z" groupings showed comparable performance, rated unsatisfactory to poor. Areas of strengths and weaknesses were consistent across all socio-economic groups. The skills of identifying the main idea, applying information, and recognizing tone appeared less well developed than the skills of noting supporting details and the sequence of events.

Study skills tended to show fewer differences among socio-economic groups than in any reading area. However, scores continued to increase as higher socio-economic levels were reached. Smaller differences occurred in chart and map reading abilities than in dictionary skills, reading table of contents and indices, and using references material.

TWELFTH GRADE READING

Twelfth grade students were tested in three broad areas of reading; namely, *word recognition, reading comprehension*, and *study skills*.

The overall results of the test showed varying levels of proficiency, ranging from marginally satisfactory to satisfactory. Students performed more capably on word recognition and study skills than on *reading comprehension* measures.

WORD RECOGNITION

Adequate performance was noted for student's ability to recognize words in both isolated and contextual settings. The occasional low level responses which occurred on measures of ability to use synonyms, antonyms, analogies, and context clues as an aide to word recognition did not significantly affect the generally satisfactory performance in this section. Of all the skills tested in this cluster, students demonstrated greatest proficiency in the usage of context clues.

READING COMPREHENSION

Comprehension skills were found to be less than satisfactory. Students had difficulty in identifying main ideas, as well as in such higher order skills as making inferences, drawing conclusions, and applying information. The results in noting sequence, recognizing tone and preceiving cause/effect relationships were inconsistent; performance ranged from poor to marginally satisfactory. Reading for details represented an exception to the cluster trend. The responses in this subskill were generally satisfactory.

STUDY SKILLS

In general, performance in the *study skills* cluster which consisted of items measuring usage of dictionary, reference books, card catalog index and table of contents, and interpreting a map and chart was satisfactory. Specific weaknesses, however, were noted on card catalog items and one of the two dictionary items. Greatest proficiencies were observed in the areas of chart and map reading and using a table of contents.

COMMUNITY TYPE COMPARISONS

Wide differences appeared when results were analyzed according to Community Types. An analysis of the data is reported below in a format which compares achievement as it occurred among the various communities.

On skills measured in the *word recognition* cluster, regional urban-suburban, suburban and suburban-rural communities achieved satisfactory results with particular strengths noted in ability to use context clues and synonyms. Rural center and rural center rural achieved scores ranging from marginally satisfactory to satisfactory on skills contained within this cluster. While strengths were also observed in the use of context clues and synonyms, sporadic deficiencies were noted on measures of usage of antonyms and analogies. Satisfactory but lower scores were achieved in urban center and vocational communities in the usage of context clues when they were compared to the level of performance attained in other communities. Marginal to unsatisfactory performance was noted in the areas of synonyms, antonyms, and analogies in the urban center and vocational communities.

Comprehension skills followed a similar pattern. Strengths were observed in understanding and recognizing tone, and relationships between cause and effect for most Community Types; however, urban and rural center Community Types rated marginally satisfactory while vocational and rural center rural achieved unsatisfactory ratings in noting cause/effect relationships. Moreover, urban and vocational types scored marginally satisfactory in recognizing tone. Overall performance on skills measuring the identification of main idea and supporting details was marginally satisfactory. Differences were noted with lower scores being achieved in urban, rural, and vocational communities on the items assessing ability to identify main idea. Disparities were more evident among the Community Types on the items which addressed the skill of reading for details. Rural, urban suburban, and suburban communities performed satisfactorily. Marginally satisfactory scores were achieved in suburban rural, rural centers, and rural center rural communities. Urban and vocational communities, respectively, attained unsatisfactory and poor results. Specific weaknesses were evidenced in making inferences, drawing conclusions, noting sequence, and applying information. All scores measuring the ability to make inferences were poor with the exception of unsatisfactory results being achieved by the regional Community Types. Likewise, assessment of the ability to draw conclusions received poor scores.

Suburban and urban-suburban communities obtained marginally satisfactory results in noting sequence while suburban-rural, rural, rural center, and rural center rural scores were unsatisfactory. Vocational communities, achieving the lowest scores, received a poor rating.

On the items dealing with application of information, satisfactory performance was noted for suburban communities. Marginally satisfactory performance was evidenced in regional, urban-suburban, and suburban-rural areas while unsatisfactory to poor performances were observed in rural center, rural, urban and vocational types.

Scores within the cluster of *study skills* reflected a higher degree of proficiency than other clusters included in this test. Overall performance in using a table of contents showed a very satisfactory rating by all Community Types with slight differences being evidenced by urban and vocational communities.

Parallel performance was observed on items measuring abilities to use charts, maps, and indices. However, more pronounced deficiencies were noted for urban and vocational communities in the usage of an index. A wider variation of scores was found in the area of using reference books; that is, all Community Types performed satisfactorily with the exception of vocational and rural types which received marginally satisfactory ratings and urban types which received unsatisfactory ratings. Lowest performance was achieved in using a dictionary and card catalog. The scores in both areas (dictionary and card catalog) ranged from marginally satisfactory to poor. The only communities receiving marginally satisfactory ratings were rural and suburban in the use of a dictionary and suburban in the use of a card catalog. Communities achieving unsatisfactory scores in both skills were urban-suburban, suburban-rural, rural center, and rural center rural. Moreover, rural communities performed similarly on items relating to usage of a card catalog while vocational communities performed similarly on items relating to dictionary skills. Finally, urban communities demonstrated poor performance in both skills and vocational communities performed poorly in usage of a card catalog.

DISTRICT FACTOR GROUP COMPARISONS

When results were compared according to District Factor Groupings, scores improved as upper socio-economic levels were reached. The differences in scores achieved in the categories (A-J) extended from a low of three percentage points to a high of 36 percentage points. Scores achieved by category "V" closely paralleled those achieved by group "A", while scores achieved by group "Z" were in close range with those achieved by "C".

In the *word recognition* cluster, measures of ability to note word relationships through the use of analogies revealed distinctive differences between high and low District Factor Groups. Scores achieved on the items addressing antonyms resulted in a similar high-low pattern; however, the degree of difference was slight. Measures of context clues and synonyms produced scores which were closer in range. The overall performance in *word recognition* indicated that twelfth grade students were most proficient in context clues followed by proficiencies in analogies, synonyms and antonyms, respectively. It was noted, however, while "V" and "Z's" scores were similar to "A" and "C" on most skills measured in this cluster, noticeable differencies were observed on items measuring analogies; "V" scores exceeded "A", and "Z" scores were higher than "C".

Differences in scores achieved by the various District Factor Groups on *comprehension* measures were not as pronounced as those observed in the *word recognition* cluster. Generally, when higher socio-economic groups received very satisfactory or satisfactory ratings, lower socio-economic groups received satisfactory or marginally satisfactory ratings. Likewise, when higher District Factor Groups received marginally satisfactory ratings, the lower groups received unsatisfactory or poor ratings. For example, highest scores in this cluster were in supporting details and attained by group "J", while "A" achieved the lowest scores. Performance by "J" ranged from very satisfactory on four of the fourteen items tested to unsatisfactory on two of the items; the lowest scores, achieved by "A", extended from satisfactory on three of the fourteen items to poor on one item. Results for group "V" dropped below "A" on the majority of the items in supporting details while "Z's" scores tended to fluctuate around "C". When the data was analyzed for drawing conclusions, the skill on which overall performance was most inadequate, the high-low pattern of achievement respective to socio-economic status, was repeated. Similar patterns were observed for the other skills tested in this cluster. Occassional differences were noted in the skill areas, identification of main ideas and application of information; the higher socio-economic groups tended to score marginally satisfactory to satisfactory and the lower socio-economic groups scored unsatisfactory to poor. Mixed performance was noted for most groups on items measuring cause and effect relationships and recognition of tone. Overall performance was satisfactory for upper socio-economic groups and unsatisfactory for lower socio-economic groups. All District Factor Groups evidenced weaknesses in ability to perform the skills, making inferences, and sequence of events.

Analysis of data for the *study skills* cluster indicated that all groups were competent in chart reading but demonstrated lesser ability in reading of a map. Scores achieved by "V" slightly surpassed "A" on chart reading and were noticiably higher than "A" on most items measuring ability to read a map. Group "Z" performed similarly when compared to "C"; however, the pattern occurred in reverse order. Strengths were also noted for all District Factor Groups on items addressing usage of a table of contents, while somewhat lesser ability was observed on measures of dictionary skills. Scores on items addressing usage of an index closely paralleled those achieved on table of contents items, while performances varied on items assessing the skills pertaining to reference books and card catalog.

SUMMARY OF READING ASSESSMENT
FOR GRADES FOUR, SEVEN, TEN AND TWELVE

Examination of the cross-grade results of reading tests administered to fourth, seventh, tenth and twelfth grade students revealed the following pattern of strengths and weaknesses for similar skills measured.

Assessment of achievement in the *phonetic analysis* cluster revealed that both fourth and seventh grade students demonstrated proficiency in the identification of the following sounds: single consonants, long and short vowels, vowel digraphs and diphthongs. Differences were noted in identification of consonant blends, scores for fourth graders indicated mastery of the skill, while seventh graders performance was less than adequate.

In the *structural analysis* cluster, fourth and seventh grade students exhibited strength in recognizing compound words, the number of syllables in words, and in separating the root portion of a word from the affixed parts (prefix and/or suffix). Differences for the two grades occurred on the skills measuring the ability to identify plural forms of words and contractions. Fourth graders were more competent in identification of contractions than seventh graders, but less competent than seventh graders on the identification of plurals.

Strengths were exhibited by all grades tested on items measuring the ability to use context clues and synonyms in the *comprehension* cluster. Usage of antonyms was observed as a strength for all but tenth grade students. Results for another skill, main idea, tested in all four grades, indicated that fourth graders were proficient in summarizing material, while seventh, tenth and twelfth graders demonstrated far less proficiency in performing this skill. Scores on recall of chronological order and sequence of events, also tested across grades, followed a similar pattern. Seventh graders were strongest while fourth, tenth and twelfth graders, evidenced deficiencies in these skills. The results of the locating information skills in the fourth and seventh grade tests, and supporting details skills in the tenth and twelfth grade tests revealed that fourth, seventh and twelfth grade students performance was high but low for tenth grade students.

On the skills, determining fact/fiction and character interpretation, fourth grade students performed satisfactorily, while seventh graders performed unsatisfactorily. Both fourth and seventh graders exhibited weaknesses in the ability to predict outcomes. Weakness was observed in the area of inferential reasoning which was tested in grades seven, ten and twelve. The following comprehension skills drawing conclusions, recognizing tone, applying information and noting cause/effect relationships were measured in the tenth and twelfth grade tests, wherein these students produced unsatisfactory results.

The *study skills* measures, usage of a dictionary and table of contents were included in all four tests. The pattern that emerged from the results illustrated that fourth graders were deficient in both measures. Tenth graders were proficient in both measures, although higher proficiency was noted in usage of a table of contents. Seventh graders demonstrated proficiency in the former and deficiency in the latter, while twelfth graders demonstrated directly opposite performance. Students in grades seven and ten exhibited competency in using a card catalogue and index. However, twelfth graders evidenced mixed performance on the respective skills. Utilization of reference books and interpretation of charts and maps were included in the tenth and twelfth grade tests. High scores were achieved by tenth and twelfth graders in the interpretation of charts and maps but deficiencies were noted in the utilization of reference materials.

MATHEMATICS ASSESSMENT - 1975-1976
FOR
GRADES FOUR, SEVEN, TEN AND TWELVE

The mathematics test for the 1975-1976 Educational Assessment Program were designed to assess mathematical competencies of students entering grades four, seven, ten, and twelve.

The fourth grade test consisted of ten clusters; namely, a) Addition, b) Subtraction, c) Multiplication and Division, d) Number and Operation, e) Numeration, f) Geometry, g) Measurement, h) Word Problems, i) Equations and Inequalities, and j) Sets and Fractional Numbers. The entire test contained 72 items with a range of six to twelve items per cluster.

Items constructed for the seventh grade test were partitioned into the following seven clusters: a) Whole Numbers, b) Fractions, c) Decimals, d) Measurement and Denominate Numbers, e) Number and Operation, f) Word Problems and Graphs, and g) Geometry and Percent. The number of items contained in each cluster ranged from a minimum of five to a maximum of twenty-two items. The test itself contained 82 items.

The tenth grade test was structured into six clusters. The item clusters were: a) Whole Numbers, b) Fractions, c) Decimals/Percent, d) Algebra, e) Geometry/Measurement, and f) Problem Solving. The test contained 90 items with a range within each cluster extending from eight to nineteen items.

The twelfth grade test included six clusters identified as a) Whole Numbers, b) Fractions, c) Decimals/Percent, d) Algebra, e) Geometry/Measurement, and f) Problem Solving. The items per cluster ranged from thirteen to sixteen items, while the entire test contained a total of 90 items.

Percentage correct data gathered on all students at each grade level tested in the state were examined for all items within a cluster. Based upon the percentage of all students answering the item correctly, as well as an item review, student performance on each item was judged as being:

Outstanding - very high degree of proficiency
Good - high degree of proficiency
Satisfactory - minimally acceptable degree of performance
Poor - low performance, reinforcement needed
Unsatisfactory - very low performance, emphasis needed

Although a uniform rating scale was developed and utilized for the interpretation of the 1975-1976 Educational Assessment Program's statewide results, it is not advisable to use a uniform system when interpreting a district's results. Since curricula vary from school district to school district, skills measured by certain items may be stressed more than others. Therefore, the comparison of students' performance on such items using the same uniform rating scale is not proper.

For example, suppose that 80% of the students in a district correctly answered an item that has not been stressed in a specific school's curriculum. Because the skill measured by this item has not been stressed, you may wish to rate the students' performance on the item as "outstanding". Alternatively, suppose that in a simple addition item measuring a skill that has been introduced in the first grade and continually reinforced throughout the first, second, and third grades, the percent of students who correctly answer this item is also 80%. Because of the nature of the item and because of the stress placed upon the skill, you may rate the performance on this item as "poor". Note that the percentage of students correctly answering both items is the same.

When interpreting a district's results, you should examine each item by itself, and in relation to that item, consider such factors as 1) when it was introduced to the students, 2) how much importance was placed upon that skill, and 3) the frequency of reinforcement of that skill. A rating must then be decided upon. A district should not make use of a uniform rating scale when interpreting their results.

For a composite cluster evaluation, the item ratings within a cluster were collapsed into a single rating. Using this overall cluster rating, a verbal interpretation of the cluster results, broken out per grade level, is presented on the following pages.

FOURTH GRADE MATHEMATICS

ADDITION

Statewide performance in the area of addition of whole numbers, the most basic arithmetic operation, was satisfactory to good. Highest proficiency was evidenced on those items that required ability to add one-digit numbers in horizontal format and multiple digits without regrouping in both horizontal and vertical format. Lower proficiency was demonstrated on items that required ability to add multiple digits with one regrouping. Students have more competence with the operation of addition when no carrying is involved.

SUBTRACTION

In this cluster, a decrease in performance was noted from previous years. Proficiency was observed only on the items assessing subtraction of one-digit numbers and of multiple digits without regrouping in vertical format. Extreme deficiencies were observed on items of subtraction of multiple digits with one regrouping both with nonzero digits in the minuend as well as with one zero in the minuend. These results indicate that much emphasis is needed on the concept of regrouping since it is essential to mastery of whole number operations.

MULTIPLICATION AND DIVISION

The *multiplication and division* cluster was constructed to test the use of multiplication facts involving one- and two-digit numbers up to six without carrying. Test results indicated good performance on multiplication of two one-digit numbers less than or equal to six; however, weaknesses were noted with multiplication of two-digit numbers by one-digit numbers without carrying, multiplication involving zero, and division with divisors and quotients less than six. Division problems written in standard form showed greater success than those written in horizontal form.

NUMBER AND OPERATION

The scores in this cluster were mixed; they ranged from outstanding to unsatisfactory performance. Students demonstrated highest proficiency on the concept of cardinality. Overall performance in ordinality (identifying the position of an object in sequence), number lines (locating points), properties of numbers (odd/even), the commutative principle (application without terminology), and simple estimation was good to satisfactory. Lowest achievement was evidenced on items dealing with the following: the associative principle (application without terminology), informal concepts of identity (zero and one), number patterns (determining the next number in an increasing pattern sequence by one), and relation of operations (addition or subtraction). Performance on the latter item could have resulted from the way it was written.

NUMERATION

Upon examining the data, overall performance in this cluster was viewed as good although performance across the board was mixed. Strengths were noted for problems relating to determination of place value, both from the numerical representation and from the word statement. Deficiencies, however, were observed on an item dealing with a pictorial representation of place value and on an item dealing with expanded notation.

GEOMETRY

Statewide achievement in all areas of *geometry* skills was rated as either satisfactory or good. Skills requiring recognition of basic geometric figures were mastered by most of the students. A perceptual problem in items relating to recognition of angles may have reduced the percentage of students correctly answering those questions; however, performance in areas relating to recognition of angles was lower than the other geometry areas and emphasis in those areas was indicated.

MEASUREMENT

The *measurement* cluster emphasized manipulating the concept of time, money, and units of measure. All the time-related questions were answered satisfactorily. Students performed somewhere within the satisfactory to good range when it came to knowledge of monetary denominations and making change. Also, recognizing relative size and linear measure did not cause major difficulties. Poorest performance was noted in the area of metric units. This may be due, in part, to the newness of this measurement method within the school curriculum. Furthermore, many teachers may not yet emphasize this method.

WORD PROBLEMS

Performance in this cluster was generally considered to be satisfactory to poor. Higher proficiency was noted in the *word problems* that involved addition and subtraction. Those that required the application of multiplication operations evidenced lower proficiency. Students demonstrated poor performance on the item containing metric terminology and on items dealing with the concept of "greater than" and "less than". One of these items required students to translate the words to mathematical sentences and could have involved possible perceptual difficulties in the orientation of symbols. Emphasis is needed on the ability to associate appropriate computational procedures with the written word as well as on reading comprehension itself.

EQUATIONS AND INEQUALITIES

Overall performance ranged from good to unsatisfactory. Items requiring the operations of addition and subtraction in solving equations showed mastery by students. Equations involving multiplication were performed satisfactorily; however, those involving division evidenced poor performance. Likewise, students demonstrated poor and unsatisfactory performance on items dealing with the concept of simple inequalities.

SETS AND FRACTIONAL NUMBERS

Results on items within this cluster were the lowest of any cluster on the test. Students consistently demonstrated great difficulty in abstracting a fraction from a pictorial representation. Also, poor performance was noted on one item of relative size of simple fractions as well as on one item dealing with subsets. Achievement was good on the one item relating to empty sets and satisfactory on the one item of relative size of simple fractions with the same denominator.

COMMUNITY TYPE COMPARISONS

When making comparisons of the achievement levels of the different Community Types, certain consistent trends become obvious. These patterns which have emerged are reported below in a format which analyzes the data according to the clusters tested.

On skills measured in the *addition and subtraction* clusters, it was found that the performance was relatively high for all items that required no regrouping by all Community Types with the exception of urban centers which received satisfactory ratings. On items that required regrouping in these operations, there was a reflection of lower performance for all Community Types, though regional and suburban districts evidenced a higher level of proficiency than other districts while urban centers, again, received lower ratings. Students from all communities exhibited poor performance on the item requiring subtraction of multiple digits with regrouping and a zero in the minuend.

Results in the *multiplication and division* cluster were mixed and roughly equivalent for all Community Types. The only strength noted in this skill area was on the multiplication of one-digit numbers. Data for all other items was relatively homogeneous for urban, rural, rural center, and rural center rural communities and evidenced poor performance. Urban-suburban and suburban-rural communities also shared similar scores which ranged from poor to satisfactory, while regional and suburban communities received satisfactory ratings.

In the *number and operation* cluster, students from urban centers scored significantly lower than all other communities on most items tested with the exception of the cardinality, one ordinality, relation of operation, and the additive identity question. All communities scored unsatisfactory on the relation of operation question probably because this item was poorly written. The scores of the rural, rural center, and rural center rural communities were lower than those of the urban-suburban, suburban-rural, and suburban communities on eleven of the twelve items tested. Moreover, the scores of the regional districts were comparable to those of the suburban districts and were slightly higher than all others.

A slight shift in patterns was observed in the *numeration* cluster. Like scores were achieved by all Community Types with the exception of urban and suburban communities and ranged from unsatisfactory on items addressing place value in pictorial and expanded notation form to good on items dealing with place value of three-digit numerals. Urban centers again evidenced a lower level of proficiency with scores ranging from unsatisfactory to satisfactory. No unsatisfactory ratings were received by suburban districts where overall performance was good.

In the skill areas of *geometry*, students in regional, suburban, and suburban-rural classifications exhibited parallel achievement in all areas. Moreover, their scores were somewhat higher when compared to those attained by other Community Types. Performance of students in urban-suburban, rural, rural center, and rural center rural districts likewise were uniform and ranged from satisfactory to good. In all skill areas, markedly lower performance was noted for students in urban centers. Differences between their percentages and all other Community Type percentages ranged from six to twenty-two points. The largest disparities existed in the areas of recognition of square corners and distance.

Urban centers continued to demonstrate a lower level of competency than all other Community Types on items within the *measurement* cluster. Their overall performance was rated as poor with percentage differences in scores exceeding twenty points at times. All other districts performed adequately and consistently with scores ranging from satisfactory to good on seven of the nine items. Poor or unsatisfactory item performance was noted across all Community Types on the items dealing with metric units which indicates a need for reinforcement within schools' curricula.

Other areas of weaknesses were evidenced within the *word problems* cluster which received poor ratings on four of the eight items by all Community Types. These items required the translation of words to symbols, knowledge of metric terminology, and the ability to perform computational procedures after interpreting the written word. On the remaining items, scores of rural, rural center, and rural center rural communities were quite similar and slightly lower than those of urban-suburban and suburban-rural communities. Likewise, regional and suburban districts performed somewhat higher than the other districts.

The level of achievement in the *equations and inequalities* cluster paralleled that of above. Specifically, urban centers again demonstrated a lower level of proficiency than all other district types and only performed adequately on items involving addition and subtraction of equations. Scores for rural, rural center, and rural center rural communities were almost homogeneous and evidenced strengths not only on the above items, but also on the item requiring multiplication in an equation. Overall performance for all other Community Types was satisfactory to good on all items with the exception of one. This item required a subtraction operation as well as an understanding of the "less than" symbol and received an unsatisfactory rating by all communities. Again, figures showed that achievement of regional and suburban type districts was slightly higher than that of urban-suburban and suburban-rural types. Moreover, performance of students in these four Community Types surpassed the performance of students in the state as a whole on the majority of the items tested.

Poor performance was generally observed in the cluster measuring ability with *sets and fractional numbers*, especially on items relating to fraction models. Furthermore, it was noted that lower score variations occurred among most Community Types with the only exception again being urban centers. When scores from other districts fell within a satisfactory to good range, those from urban districts were rated as poor to satisfactory. Students from suburban communities performed better than all others though regional and suburban-rural type students were not far behind.

DISTRICT FACTOR GROUP COMPARISONS

The ten District Factor Groups formed were labeled from "A" to "J" with "A" containing those districts with the lowest socio-economic factor scores and "J" the largest. Analysis of fourth grade results showed, in general, an upward trend in percent correct scores as one proceeded from group "A" to group "J". Adjacent group differences for a given item were most pronounced when comparing scores for group "A" with scores from group "B". Moreover, scores from group "Z", which represented districts with an enrollment of less than 300 students, usually tended to fall between those of groups "C" and "D". There appeared to be a greater homogeneity of group performance for those items showing a high percentage of correct response. The reverse was true for items having a low percentage of correct response. That is to say, as the percentage of students correctly answering a given item decreased, the group variability based upon percent correct scores increased.

In the *addition* cluster, overall performance for all District Factor Groups was satisfactory to outstanding. Particular strengths were observed on the item addressed to addition of one-digit numbers followed by measures of multiple digits with no regrouping. Satisfactory scores were noted on items requiring addition of multiple digits with regrouping except for one poor rating obtained by group "A".

A lower level of proficiency was observed in the *subtraction* cluster as compared to the *addition* cluster. Only two of the six items received good ratings by all District Factor Groups; these involved subtraction with no regrouping. On items dealing with subtraction of multiple digits with regrouping, performance was generally poor. The only exception was on one item where groups "D" through "J" showed satisfactory performance. On these items, there also existed a twenty point difference between scores of groups "A" and "J".

Results within the *multiplication and division* cluster were quite mixed. In the area of multiplication of one-digit numbers, all groups demonstrated good performance with the exception of "A" which performed satisfactorily. On other multiplication items, groups "A" through "E" as well as "Z" generally performed poorly, while other groups exhibited satisfactory performance. Somewhat similar performance was noted on measures of division.

Mixed performance was again evidenced in the *number and operation* cluster. All District Factor Groups attained unsatisfactory achievement on the item dealing with relation of operation. Likewise, unsatisfactory scores were obtained on the associative principle item by all groups with the exception of "J" which had poor scores. On most other items, groups "D" through "Z" shared similar scores ranging from satisfactory to good; groups "B" and "C" had comparable scores ranging from poor to good. Finally, figures showed that group "A" continued to demonstrate a lower level of proficiency with overall performance rated as poor.

Performance in the *numeration* cluster showed a greater consistency in ratings among the various District Factor Groups. Groups "B" through "Z" received good scores on items addressed to place value with three-digit numerals, while group "A" performed satisfactorily. All District Factor Groups achieved unsatisfactory scores on the item involving place value in pictorial form. On one item relating to place value in expanded notation, groups "A" through "E" and "Z" also performed unsatisfactorily; all other groups evidenced poor performance. On the item requiring knowledge of the numeration system, groups "A" through "C", performed poorly, groups "D" through "I", and "Z" had satisfactory ratings, and group "J" evidenced good performance.

In the skill areas of *geometry*, larger margins of differences occurred among the District Factor Groups. Satisfactory to outstanding performance was achieved by groups "B" through "Z" on items assessing knowledge of geometric figures and angles, and geometric relations. Significantly lower scores were attained by group "A"; they ranged from poor to satisfactory.

Overall performance for groups "B" through "Z" in the *measurement* cluster was satisfactory to good. The only exceptions were noted on items requiring ability to identify metric units which received unsatisfactory and poor ratings by all District Factor Groups. Figures showed consistently lower scores on all items for group "A". Particular strengths were observed in the areas of linear measure, time, and money concepts.

In the simple word problems cluster, it was found that group "A" continued to perform significantly lower than all other groups. Overall performance for groups "B" through "Z" ranged from poor to good with item difficulty accounting for the differences in level of achievement. It was observed that scores for groups "I" and "J" were slightly higher than those of other groups.

A specific weakness was evidenced in the *equations and inequalities* cluster on the one item dealing with simple inequalities; all District Factor Groups received an unsatisfactory rating on this item. On another item measuring this skill, groups "A" through "C" performed poorly while all other groups performed satisfactorily. In the area of solving equations, overall achievement ranged from satisfactory to outstanding for groups "B" through "Z" and from poor to satisfactory for group "A".

In the *sets and fractional numbers* cluster, generally poor performance was observed on measures of fraction models and subsets by all District Factor Groups. The item involving the idea of empty sets received a satisfactory score by group "A", good ratings by groups "B" through "I" and "Z", and an outstanding score by group "J". Finally, items addressed to relative size of fractions were performed satisfactorily by all District Factor Groups with the exception of group "A" which had poor scores.

WHOLE NUMBERS

Student performance on items within this cluster was generally satisfactory. Highest proficiency was observed in the operations of addition and subtraction without regrouping. On items of subtraction which required regrouping and/or contained a zero in the minuend, lesser proficiency was noted. All items which required the use of the multiplication and division algorithms likewise evidenced minimally satisfactory performance, with the exception of the item relating to division using one- and two-digit divisors with a remainder which showed poor performance by students.

FRACTIONAL NUMBERS

This cluster was constructed to test the understanding of fractions through the use of models, equivalence, and operations. The items which addressed themselves to models and equivalence received ratings of satisfactory and poor, respectively. In general, performance on all items involving operations was poor to satisfactory. Exceptions were noted in the operations of addition of like fractions and of mixed numbers without regrouping in vertical format, subtraction of like fractions without regrouping, and multiplication of a whole number by a proper fraction in horizontal format. Particular difficulties were observed on operations containing unlike fractions and/or regrouping, and division of a whole number or a proper fraction by a proper fraction.

DECIMALS

A majority of poor and unsatisfactory scores in this area indicates a need for reinforcement and expansion of decimal concepts. Lowest proficiency was attained on the items requiring expression of decimals in expanded notation and subtraction of decimals in horizontal format. Items assessing the skills of recognition of place value, addition in horizontal format, and multiplication similarly rated poorly. Areas of strength were observed in vertical addition and subtraction, as well as division of a whole number by a decimal.

MEASUREMENT AND DENOMINATE NUMBERS

Overall performance in this cluster was minimally satisfactory. Competency was evidenced on items dealing with units of measure, money computation, conversion, and perimeter. Students demonstrated weaknesses in the areas of temperature, addition and subtraction of denominate numbers, and metric knowledge. Moreover, they performed unsatisfactorily on the item of area measurement, which perhaps needed revision.

NUMBER AND OPERATION

Overall achievement in the basic skills area of *number and operation* was rated poor to good with the majority of the items identified as satisfactory. Good performance was indicated only in areas of whole number numeration and application of the associative principle. Poor performance was noted in areas concerning inequality relations, rounding, place numeration, averaging of numbers, and concept of greatest common factor; added emphasis is needed on these skills.

WORD PROBLEMS AND GRAPHS

Performance in this cluster was evenly distributed from good to poor. Reading skills did not seem to account for the considerable variability encountered in the areas of simple word problems and graphs. Instead, a requirement of multiple math operations severely affected performance even when both operations were by themselves readily answered correctly.

GEOMETRY AND PERCENT

General performance was poor for this cluster. Students demonstrated the ability to identify polygons as well as a satisfactory understanding of the concept of percents. Lesser proficiency was evidenced on the item containing geometric terms and on the item requiring computation of a percent of a number. The item which addressed knowledge of geometric relations received an unsatisfactory rating; this may have been due to possible ambiguity in two- or three dimensional perception of perpendicularity.

COMMUNITY TYPE COMPARISONS

Wide differences appeared when results were analyzed according to Community Types. An analysis of the data is presented below by each cluster.

Overall attainment in the *whole number* cluster ranged from satisfactory to good. The performance for all Community Types on addition not requiring regrouping was good. Performance was minimally satisfactory for items requiring regrouping and the use of the multiplication and division algorithms. The urban-suburban, suburban, and regional districts generally performed higher than the other districts on most items. Though the performance of urban and vocational Community Types was generally lower than other Community Types, the margin of difference between these and the other communities was greatly increased on items that required mastery of multiplication and division facts.

For the *fraction* cluster, Community Types results were roughly equivalent across all items. Relative unsatisfactory performance was noted across all communities for the items measuring multiplication and division of fractions. Generally poor performance was observed on items relating to relative size, addition and subtraction of mixed numbers with regrouping, least common denominator, equivalence, and conversion. Satisfactory or good performance occurred on the items measuring models, addition and subtraction with no regrouping, and multiplication of whole numbers by proper fractions. Over all items in the cluster, regional, suburban, and suburban-rural areas showed superior performance over the Community Types.

The suburban district scores were highest in all areas with the percentage point spread among the communities ranging from 10 to 24 units within the *decimal* cluster. The urban center and vocational scores were consistently lower than those of the other groups. Exceptions to the above were found in the areas of place value, and vertical addition and subtraction where the vocational scores were comparable to those of the six suburban and rural districts. The scores of the regional districts were consistently within 2 percentage points of the suburban-rural districts on all items.

For all Community Types, there was an overall need for review in the areas of metric knowledge, temperature, area measurement, and addition and subtraction of denominate numbers in the *measurement and denominate numbers* cluster. Urban districts scored lower in these areas with greater discrepancies evident on the item dealing with temperature. Regional, urban-suburban, and suburban-rural districts scored consistently on all items with mixed performance noted. Homogeneous ratings were attained by the three rural communities as well as by the vocational districts. Performance in the suburban communities was satisfactory or better on all items.

For all twenty-two items in the *number and operation* cluster, students in districts classified as suburban performed uniformly best of all of the different Community Type districts. Students in regional, urban-suburban, rural, and suburban-rural districts performed almost identical to each other. However, the percentages of students correctly answering the items were slightly lower than for the suburban students. Students in rural center and rural center rural districts also performed equivalently, but in general somewhat less than all of the other types of districts excluding the urban center and vocational technical districts. Except for a few isolated instances, the performance of the urban center districts was poorer than the performance in any of the other districts. The performance of the students in vocational districts fluctuated a great deal depending upon the nature of the item.

Urban pupils scored an average of ten percentage points below the state average on most items in the *word problems and graphs* cluster. Overall performance in the simple word problem section ranged from poor to good with consistency noted across all other Community Types. Areas of weakness were observed in the ratio and proportion question as well as on questions relating to the interpretation of charts. The test items requiring multiple operations showed uniformly poor achievement.

In general, the level of achievement in the *geometry* cluster was poor for all Community Types. Specifically, the performance of urban center students was much poorer than that of other groups on test items related to percentage and the identification of geometric terms. Recognition of geometric relations was unsatisfactory among all groups and may reflect a lack of exposure. All Community Types received a good rating on the item requiring the identification of polygons.

DISTRICT FACTOR GROUP COMPARISONS

Based upon socio-economic variables, the ten District Factor Groups were labeled from "A" to "J" with "J" containing those districts with the highest factor scores. The other two groups, "V" and "Z", were representative of vocational districts and districts with an enrollment of less than 300 students, respectively. Results for these groups in seventh grade mathematics paralleled those of the fourth grade; that is, an increase in the socio-economic status of the group was generally reflected by an increase in achievement. Group "V's" scores tended to cluster between those of groups "A" and "B" while percentages of group "Z" were somewhat erratic in pattern.

Overall performance in the area of *whole numbers* was satisfactory to good for all District Factor Groups with the exception of groups "A" and "V". Areas of strengths across all groups were noted on items pertaining to addition as well as subtraction with no regrouping. On items involving multiplication and division operations, groups "B" through "J" and "Z" demonstrated satisfactory performance, while groups "A" and "V" attained poor scores.

Larger differences among District Factor Groups appeared in the *fractions* cluster; at times, percentages for higher performing groups exceeded those of lower performing groups by as much as forty points. Overall performance for all groups was poor; satisfactory achievement by all District Factor Groups was only noted on items addressed to addition of like fractions, addition of mixed numbers with no regrouping, subtraction of like fractions with no regrouping, and multiplication of a whole number by a proper fraction. Likewise, all District Factor Groups received unsatisfactory ratings on items requiring division of a whole number and/or proper fraction by a proper fraction.

Deficiencies were also evidenced by all District Factor Groups in the *decimals* cluster except on the vertical addition and subtraction items, and the division of a decimal by a whole number item where overall performance was satisfactory to good. Unsatisfactory ratings were received by all District Factor Groups on the item requiring ability to subtract decimals in horizontal format; on the remaining items, performance was considered to be poor to unsatisfactory though groups "H", "I", and "J" consistently scored higher than all others, while groups "A" and "V" likewise scored lower.

Results within the *measurement and denominate numbers* cluster were quite mixed, although areas of strengths and weaknesses were consistent across all District Factor Groups. Students demonstrated greatest proficiency on items pertaining to units of measure, money computation, and conversion. Deficiencies were evidenced in area measurement, temperature, and addition and subtraction of denominate numbers. Percentages for performance on all items were substantially higher for higher socio-economic groups than for those of lower socio-economic groups.

On skills measured in the *number and operation* cluster, it was found that the level of achievement of the various District Factor Groups paralleled that of other clusters. Specifically, figures showed that the performance of the higher socio-economic groups again surpassed that of the lower groups. While overall performance for groups "B" through "J" and "Z" was satisfactory, group "A" had only one satisfactory rating. Scores for group "V" ranged between poor and satisfactory. Students had most difficulty with items relating to rounding, place value in expanded notation, decimals, numeration, average, and greatest common factor. Greatest proficiencies were observed on items addressed to whole numbers numeration, and the commutative and associative principles.

Occasional low level responses did not affect the generally satisfactory performance of groups "B" through "Z" in the *simple word problems* cluster. However, group "A" continued to demonstrate primarily poor performance. The only items to receive good ratings by all District Factor Groups were one simple word problem as well as the item pertaining to an inverse operation involving addition and subtraction. There was a reflection of poor performance on one simple word problem, the ratio and proportion item, and an interpretation of a chart item.

In the final cluster, *geometry and percent*, scores attained by groups "G" through "J" were higher than those of other groups. Moreover, percentages for groups "D" through "F" were relatively homogeneous and surpassed those of groups "A" through "C". Sporadic performance was noted for groups "V" and "Z" within the ranges of the lower socio-economic groups. All groups demonstrated good performance on the item requiring the ability to identify polygons, while unsatisfactory achievement was observed for all District Factor Groups in the area of geometric relations.

TENTH GRADE MATHEMATICS

WHOLE NUMBERS

The *whole numbers* cluster tested the ability of students to perform operations with whole numbers as well as their understanding of properties of numbers. Overall performance was considered to be good to outstanding. The operations of addition and subtraction of multiple places in horizontal and vertical format without carrying and borrowing, respectively, were considered outstanding. Good performance was noted on items of addition and subtraction of multiple places with carrying and borrowing, multiplication with two- and three-digit numbers and zero, division of one-digit divisors without a remainder and of one- and two-digit divisors with a remainder, odd-even and factor properties of numbers, and rounding. Weaknesses were evidenced with the use of two-digit divisors without a remainder and in the expression of a multiple of a number.

FRACTIONS

Performance on the fraction items was viewed as satisfactory to poor. The only item to receive a good rating required students to subtract proper fractions in horizontal format. Students performed satisfactorily in the areas of equivalent fractions, identification of least common denominator, comparison of relative size, and addition and subtraction of proper and improper fractions in vertical format. Much difficulty was exhibited on items addressed to the operations of addition and subtraction of proper fractions and improper fractions in horizontal format, as well as of mixed fractions in vertical format. Likewise, poor performance was observed on items of multiplication and division involving whole numbers, proper fractions, improper fractions, and mixed numbers.

DECIMALS/PERCENT

Student achievement in this cluster was very poor. The scores obtained indicated that these concepts have not yet been mastered by students. The only strengths observed were in such areas as locating the decimal point in a multiplication problem, conversion of decimals and percents to fractions, addition of decimals in horizontal format, and division of decimals when the divisor had no decimal. Acute deficiencies were evidenced in the rounding and subtraction of decimals, conversion of percents to fractions and decimals, multiplication of decimals with a zero, and division of decimals with the answer less than one or by a multiple of ten. Students also showed difficulty when required to determine the percentage of a number, the percentage of what one number was of another, and the number when the percentage of it was already known.

ALGEBRA

Scores in this cluster were equally distributed between satisfactory and poor with one unsatisfactory rating on the item dealing with additive and multiplicative inverses. The satisfactory ratings were received in the areas of the real number line, fundamental operations with positive and negative numbers, square roots, exponents, identity elements with one and zero, and simple word problems. Much less proficiency was demonstrated on items requiring understanding of the concepts of the commutative, associative, and distributive principles, substitution and evaluation of formulas, solution of first degree equations, combination of similar terms, multiplication of monomials, translation of words to symbols, and location of points in the coordinate plane. The quantity of poor scores may be due to the fact that not all students have been exposed to algebra by the tenth grade. These poor scores appeared in the areas which are not normally taught in general mathematics courses.

GEOMETRY/MEASUREMENT

Overall performance in this cluster was mixed. Students had little trouble converting units within the same system and understanding the concept of parallelism. Difficulties were noted in the addition and subtraction of deonominate numbers with regrouping. Poor performance occurred on questions dealing with area and perimeter measurements. Unsatisfactory results were obtained on the area and circumference of circles item. The extremely low rating may be due, in part, to the wording of the question and/or the complexity of the numeric manipulation.

PROBLEM SOLVING

Questions in this area tended to be applicable and relevant to practical situations. They required reasoning as well as understanding of basic concepts. Overall achievement was satisfactory with strengths demonstrated on items relating to money, temperature, average, and sales tax. Likewise, questions assessing the ability to read data from information on line and bar graphs were performed successfully, with the exception of one question which received an unsatisfactory rating. This problem, however, required a more complex level of analysis and/or may have been difficult for students to verbally interpret. Difficulties also existed in problems involving ratio-proportion and consumer mathematics; namely, simple interest, discount, and comparative buying questions.

COMMUNITY TYPE COMPARISONS

In comparing the achievement of the Community Types, various differences were noted in the results. These are analyzed according to clusters and are reported below.

The results for the *whole number* cluster from the tenth grade exam were consistently rated satisfactory or above for all Community Types. The exceptions to the above occurred on items addressed to two-digit division without a remainder and identification of prime factor multiples. Over all Community Types, poorest performance was noted in the urban and vocational centers. Percentages for the regional and suburban districts were slightly higher than those of other Community Types.

For the *fraction* cluster, the level of achievement for all Community Types was poorest on items requiring addition and subtraction of improper fractions of mixed numbers in horizontal and vertical format, respectively. Moreover, students from all areas demonstrated similarly poor performance on multiplication and division of fractions. Results on all other items in this cluster were generally satisfactory for all Community Types with the exception of urban, rural center rural, and vocational centers where performance continued to be poor.

Scores received in the *decimal* cluster were primarily poor for all Community Types. Exceptions to this trend were noted on items dealing with equivalence of decimals to fractions, conversions of percents to fractions, and basic arithmetic operations involving decimals. Relative to specific Community Types, poorest performance was observed in the urban and vocational centers.

The scores of the vocational schools were lower than others on all but four items in the *algebra* cluster. In these four areas, there was only a 1-2 point spread between their scores and those of the urban centers. The suburban districts scored highest on all items with the exception of the multiplicative inverse item on which all groups scored unsatisfactorily. The three suburban districts scored consistently higher than the three rural districts. The regional scores were comparable to those of the suburban type groups. All groups scored poorly on items dealing with the distributive property, formulas, combining terms, multiplying monominals, and points in a plane.

Suburban districts consistently outscored all other Community Types in the *geometry/measurement* cluster. Only small score variations were noted among districts classified as urban-suburban, suburban-rural, and rural. Results for rural center and rural center rural districts also tended to cluster together and were slightly below those of the above mentioned Community Types. The scores from the urban center districts were well below those of all other district types. Vocational results tended to reflect the performance of the urban centers, especially on items with a poor rating.

Mixed performance was evidenced in the *problem solving* cluster across all Community Types. Consistency in ratings was noted among rural types and vocational centers. Results from suburban types and regional centers also tended to cluster and were, only in specific instances, higher than the ratings of the rural type communities. Weaknesses were observed on items measuring ability to interpret data and consumer math problems.

DISTRICT FACTOR GROUP COMPARISONS

The ten District Factor Groups represented a continuum based on socio-economic variables with "A" being the lowest socio-economic group and "J" being the highest. The remaining two groups labeled as "V" and "Z" were representative of vocational districts and districts containing an enrollment of less than 300 students, respectively. When a comparison of results was made according to District Factor Groups on the tenth grade level, scores for most skills measured were progressively higher as upper socio-economic levels were reached. For some items, the differences were minimal; however, for the majority of the items, there existed wider disparities between the scores. This greater variability was especially evident when test items were of moderate difficulty.

In the *whole numbers* cluster, overall performance was good. Scores for groups "D" through "J" were consistently higher than those of other groups; likewise, scores for groups "A", "V", and "Z" were lower. Areas of strength were observed on items requiring addition, subtraction, multiplication, division with one-digit divisors, and odd-even properties. Poor performance was noted on only two items; namely, division with two-digit divisors with no remainder and one prime factor multiple item.

Disparities among scores of the District Factor Groups were more evident in the *fractions* cluster with differences ranging between 7 and 23 points. Again, percentages of groups "D" through "J" exceeded those of groups "A" through "C" and "V". Performance of group "Z" was sporadic with scores falling somewhere in the former group's range. Overall performance in the cluster was poor to satisfactory for the upper socioeconomic groups and poor for the lower groups. Students demonstrated greatest proficiency on items addressed to relative size, and addition and subtraction of proper fractions. All other items involving basic arithmetic operations with whole numbers and/or fractions received poor ratings.

Figures showed that groups "A" through "C" and "V" continued to demonstrate a lower level of achievement in the *decimals/percent* cluster than other District Factor Groups, although scores for groups "A" and "Z" were somewhat lower than those of "B" and "C". Similarly, like scores were attained by groups "D" through "J" with those of groups "I" and "J" slightly exceeding all others. Percentages of group "Z" tended to fall between those obtained by groups "C" and "D". Overall performance for all District Factor Groups was poor with the exception of items pertaining to equivalence of decimals to fractions, addition and multiplication of decimals, division of a decimal by a whole number, and conversion of a percent to a fraction. These items were performed satisfactorily by the majority of the District Factor Groups.

Performance in the *algebra* cluster was quite mixed with a definite shift in pattern noted from other clusters. Groups "A" and "V" shared similar ratings, although percentages of group "V" fell below those of "A" on the majority of items tested. Moreover, these two groups received seven unsatisfactory ratings, while all other District Factor Groups received only one. This rating was obtained on the item relating to the additive and multiplicative inverses. Throughout the cluster, percentages for groups "I" and "J" were relatively homogeneous and surpassed those of other groups. Students from all District Factor Groups exhibited proficiency on items addressed to identity elements as well as on one item requiring solution of a first degree equation. Performance in all other areas was poor to satisfactory.

In the *geometry/measurement* cluster, there was a reflection of good to outstanding performance on the item dealing with geometric relations by all District Factor Groups. Unsatisfactory to poor performance was observed on items pertaining to area measurement, perimeter, and area and circumference. On the remaining items, groups "I" and "J" received satisfactory to good ratings, while the other District Factor Groups attained poor to satisfactory results.

On skills measured in the *problem solving* cluster, it was found that students from all District Factor Groups performed adequately and consistently in the areas of money, temperature and interpretation of data from a graph. Likewise, all District Factor Groups achieved unsatisfactory to poor results on the ratio-proportion items, one interpretation item, and the consumer math items with the exception of the tax problem. Again, groups "A" through "C" and "V" were outperformed by the other District Factor Groups, while groups "I" and "J" demonstrated somewhat higher levels of achievement.

WHOLE NUMBERS

In the area of *whole numbers*, students' performances were generally good in addition, subtraction, multiplication, and division as well as in the concepts of odd-even and rounding. Mastery was noted in addition and subtraction which involved no carrying and borrowing. However, performance was only satisfactory on the item requiring division with a two-digit divisor, though not when students were exclusively asked to identify the remainder. Likewise, satisfactory performance was evidenced on the item requiring students to identify a multiple of a number which again involved a two-digit divisor. This may indicate that students either had general difficulties with two-digit divisors or that they lacked understanding of the terminology.

FRACTIONS

Overall achievement in this cluster was satisfactory to poor. Good performance was noted for only two out of the fourteen items in the areas of relative size and subtraction of proper fractions in horizontal format. Items which received satisfactory ratings dealt with equivalent fractions, least common denominator, addition of proper fractions, and subtraction of improper fractions in vertical format. Difficulties were witnessed on items addressing addition of improper fractions, addition and subtraction of mixed fractions, and multiplication and division involving whole numbers, mixed numbers, and proper and improper fractions.

DECIMALS/PERCENT

Basic performance ranged from satisfactory to poor. The only item which received a good rating dealt with multiplication of decimals. Satisfactory performance was observed in the areas of equivalence of decimals and percents to fractions, identification of a number when the percent of it was known, addition and subtraction of decimals in horizontal format, multiplication of decimals with a zero, and division of decimals when the divisor had no decimal. Students demonstrated much difficulty on items requiring conversion of fractions and percents to decimals, division of decimals with the answer less than one or by a multiple of ten, rounding, and identification of a percent of a number or what percentage one number was of another.

ALGEBRA

Results were mixed in this cluster. However, achievement in most basic skills areas of algebra was rated as satisfactory or poor. Strengths were evidenced on the questions on square roots, identity elements, and solution of first degree equations. Questions relating to the real number line, fundamental operations with positive and negative numbers, exponents, and simple word problems received satisfactory ratings. Students had difficulty with the concepts of the commutative and distributive principles, subtraction and evaluation of formulas, combining similar terms, translation from words to symbols, and location of points in the coordinate plane. Unsatisfactory performance was evidenced in skills relating to the multiplicative inverse. This, however, may be due to the lack of the number of items sufficiently measuring the skill. It should be noted that the low percentage of scores may partially be attributed to the fact that algebra courses are not required of all students.

GEOMETRY/MEASUREMENT

Overall performance in this cluster fell below expectations since the items seemed to represent concepts taught many times prior to the twelfth grade. Therefore, in a number of instances and particularly on items involving measurement, performance should have been higher than actual achievement. Students had no difficulty with questions on parallelism, conversion of units, addition and subtraction of denominate numbers, and types of angles. However, they did demonstrate inadequate knowledge on questions of angle measurement, perimeter, area and circumference of circles, sum of angles, and application of Pythagorean Theorem. It is recommended, as in previous years, that new techniques be developed in order to provide for greater retention.

PROBLEM SOLVING

The level of achievement varied greatly within this cluster. Scores ranged from one outstanding to five poors. Areas of strength were observed on items assessing the ability to read data from information on bar and line graphs (with the exception of one question which required skills of higher proficiency), and to compute sales tax, money, and temperature problems. Performance in the area of consumer mathematics exhibited lesser proficiency, especially on more difficult items involving two-step computations or fractional percents. Weaknesses were also evidenced in the ratio problem involving unlike quantities and in consumer buying where price comparison was necessary.

COMMUNITY TYPE COMPARISONS

When comparisons were made on test results for varied Community Types, differences were observed. These are presented below according to clusters.

Overall performance in the cluster of *whole numbers* was good on items involving basic arithmetic operations as well as on the concepts of odd-even and rounding for all Community Types across the state. Mastery in addition and subtraction which involved no carrying and borrowing, respectively, was noted. Poor performance was demonstrated by urban and vocational centers on items requiring division with a two-digit divisor though not when students were solely asked to identify the remainder. Likewise, poor performance was evidenced by urban and vocational centers on the item requiring students to identify a multiple of a number. All other Community Types performed satisfactorily in these two areas. This occurrance may be attributed to a variety of causes; namely, general difficulties with two-digit divisors, level of item difficulty, and/or lack of understanding of terminology.

Results for urban-suburban and suburban-rural communities as well as the three rural type communities were somewhat parallel and ranged from poor to satisfactory within the *fractions* cluster. Regional and suburban district scores were also quite similar and tended to exceed those of all other Community Types. The lowest scores were noted in the vocational centers with urban centers demonstrating only a slightly higher performance. Deficiencies were most evident on items requiring addition and subtraction of improper fractions and mixed numbers, and all multiplication and division operations involving fractions.

Throughout the *decimal/percent* cluster, the suburban districts had the highest scores. On the multiplication of decimals item, the high score was also shared by the regional and urban-suburban districts; on the decimal division by a whole number item, it was shared by the regional group only. The urban centers had the lowest scores on all items except the decimal division by a whole number and the quotient less than one items. The lowest scores here were achieved by the vocational districts which also shared the lowest scores on three other items. On all items, the three rural districts had lower scores than the three suburban districts. The regional district scores were comparable to the suburban district scores with a point spread of four or less. Poor scores were achieved by all Community Types in the following areas: equivalence of fractions to decimals, quotients less than one, division by multiples of ten, rounding, percent to decimals, and proportion percent.

The general Community Type trends that existed for other clusters also existed in the *algebra* cluster. Specifically, urban and vocational centers tended to show poorer performance than that of other Community Types. The rural type communities demonstrated similar profiles in item responses which were somewhat lower than those of the suburban type and regional communities. Again, students from suburban districts outperformed students from all other Community Types. Poorest performance was noted in the areas of operation principles, additive and multiplicative inverse, formulas, combining terms, and points in a plane.

Generally, the Community Types performances reflected that of the state in the *geometry/measurement* cluster. Performance was minimally satisfactory to very poor on items involving perimeter, area and angle measurement, area and circumference, sum angles of a triangle, and the Pythagorean Theorem. This may have been due to the fact that many of the students tested had not received instruction in geometry for more than two years. The only item to receive good to outstanding ratings dealt with geometric relations. It should be noted that the scores of urban centers and vocational districts were much lower on most items that all other Community Types. Likewise, rural type communities performed lower than suburban type districts. Achievement by regional and suburban communities was comparable and somewhat higher than other Community Types. In all cases, the analysis indicated that diversification was more pronounced on items of moderate difficulty.

In the *problem solving* cluster, the overall performance ranged from satisfactory to good for all Community Types. Again, the three rural type communities shared similar scores which were slightly lower than those of the urban-suburban and suburban-rural districts. Suburban and regional communities also exhibited like results which tended to be higher than all other Community Types. Urban centers and vocational schools consistently performed lower. It was observed that students across the state had weaknesses in the areas of ratio and proportion and consumer problems.

DISTRICT FACTOR GROUP COMPARISONS

When comparing results across the District Factor Groups in the twelfth grade, it remained apparent that achievement increased as the socio-economic status of the groups increased. The ten District Factor Groups based on socio-economic variables were labeled from "A" to "J" with "A" being the lowest group and "J" being the highest. Groups "V" and "Z" were representative of vocational districts and districts containing an enrollment of less than 300 students, respectively.

Also evident in the analysis was that the *whole number* cluster seemed to discriminate the least among the District Factor Groups. Specifically, there existed a general comparability across the District Factor Groups with the exception of three items. They were as follows: the odd-even properties item which received good and outstanding ratings,and the prime factor multiple and division with a two-digit divisor and a remainder items which received poor and satisfactory ratings. Overall performance on all other items was good for all the District Factor Groups.

Marked differences occurred for items dealing with *fractions* among the District Factor Groups. Specifically, overall performance for groups "A" and "V" was poor, while overall performance for all other District Factor Groups ranged from poor to satisfactory. Competency was observed on items pertaining to relative size and addition and subtraction of proper fractions in vertical and horizontal format. Again, a lower level of achievement was noted for groups "A" and "V" on these items. Students had difficulty with the operations of addition and subtraction of mixed numbers as well as multiplication and division with whole numbers, mixed numbers, and proper and improper fractions.

Areas of strengths and weaknesses were consistent across all socio-economic groups in the *decimals/percent* cluster. Students performed adequately on items addressed to equivalence of decimals to fractions, multiplication of decimals, and conversion of percents to fractions. Poor performance was exhibited on items relating to equivalence of fractions to decimals, quotient less than one, division with a multiple of ten, rounding, conversion of percent to decimals, and proportion percent. On these items, only group "J" performed satisfactorily. Percentages for groups "D" through "J" surpassed those of groups "A" through "C", "V",and "Z" on the majority of the items tested.

Disparities were more evident among the District Factor Groups in the *algebra* cluster with scores ranging from unsatisfactory to poor on the additive and multiplicative inverse item to satisfactory to good on items dealing with the real number line, square roots, identity elements, and first degree equations. Performance on all other measured skills was poor to good. Groups "A" and "V" continued to demonstrate less proficiency, although scores for group "V" were lower throughout the cluster. Similarly, groups "H" through "J" outperformed the other District Factor Groups.

In skill areas of *geometry/measurement*, overall achievement was about equally divided; that is, results ranged between poor and satisfactory. Exceptions were found on the geometric relations item as well as on one type of angle item where performance was outstanding to satisfactory. Lowest proficiency was demonstrated on items pertaining to area measurement, area and circumference, and application of the Pythagorean Theorem. Figures also showed poor performance on the perimeter and sum angles of a triangle items with the exception of groups "I" and "J" which had satisfactory ratings. Again, groups "A" and "V" had the lowest percentages in this cluster. Similar scores were shared by groups "B" through "H" and "Z"; like results were achieved by groups "I" and "J" and were higher than all others.

The generally positive relationship between higher scores and upper socio-economic status remained in evidence in the *problem solving* cluster. Areas of strength for all District Factor Groups were witnessed on items involving money, temperature, average, interpretation of data, and consumer math with tax. Weaknesses for all District Factor Groups were observed on one interpretation of data item and in consumer math with discount and buying. Performance of groups "I" and "J" surpassed the other District Factor Groups, while groups "A" and "V" again evidenced lesser proficiency.

SUMMARY OF MATHEMATICS ASSESSMENT
FOR GRADES FOUR, SEVEN, TEN AND TWELVE

Cross-grade results for the mathematics test administered to fourth, seventh, tenth, and twelfth grade students revealed the following patterns of strengths and weaknesses for similar skills measured.

WHOLE NUMBERS

Mastery of basic operations involving whole numbers was demonstrated at grades ten and twelve; that is, students at these levels encountered little difficulty with any items in this cluster. In the fourth grade, satisfactory achievement was evidenced in the area of addition, while generally poor results were observed on items of subtraction, multiplication, and division. However, this lack of proficiency appeared to be rectified by the seventh grade.

FRACTIONS

Computations involving fractions resulted in generally poor scores for fourth and seventh grade students. Fourth graders had the most difficulty with fraction models, while seventh graders had troubles with subtraction and division operations. The performance in the tenth and twelfth grades was similar with the exception of one item on comparison of fractions. Strengths were noted with addition and subtraction operations, while deficiencies were observed in the areas of multiplication and division of fractions in these grades.

DECIMALS/PERCENT

In the manipulation of decimals and decimal equivalents, including percentages, cross-grade results were uniform and ranged from satisfactory to poor. Overall performance in addition and subtraction of decimals, as well as division of a decimal by a whole number, was satisfactory for seventh, tenth, and twelfth grades. Improvement was noted in the area of multiplication in the upper grades. However, weaknesses were still evidenced in division. Other areas of deficiency were observed on items requiring decimal equivalence and/or conversion, and on items dealing with percentage.

ALGEBRA/NUMBER AND OPERATION

In all comparable categories, the scores within these clusters improved as grade level increased. The only exception was found on items relating to the operation principles which were rated satisfactory in the seventh grade, but poor in the tenth and twelfth grades. Otherwise, the range of the scores was consistent throughout the four grades; that is, those which were rated satisfactory remained within that range and those which were rated poor remained that way. Students exhibited proficiency in the use of the number line and in the concept of identity in all grades. Tenth and twelfth graders also demonstrated ability to perform operation, square root, exponent, and simple word problems. However, they had difficulty in the areas of inverse, formulas, combining terms, translating words to symbols, and locating points in a plane.

GEOMETRY/MEASUREMENT

Geometry and measurement skills were assessed at all four grade levels. At the fourth grade level, students evidenced good to satisfactory performance on various geometric and measurement items. The only area of weakness in this grade was found in the identification of metric units which seemed to indicate a lack of curricular emphasis. Performance on the seventh, tenth, and twelfth grade levels with respect to geometry, measurement and denominate numbers was not consistent. All three levels evidenced satisfactory performance in the area of conversion within the same system and poor performance on items relating to area and/or angle measurement. Seventh graders demonstrated ability to perform perimeter problems, while tenth and twelfth graders did poorly in this area. However, seventh graders had difficulty with geometric relations and addition and subtraction of denominate numbers, while the upper grades performed very well. Overall trends for all grades suggested that student performance tapered off at successive grade levels rather than augmented. However, these trends may reflect the fact that the number of items varied from cluster to cluster across the four tests.

PROBLEM SOLVING

The level of achievement for this cluster increased across all four grades from minimally satisfactory to good, while the number of and difficulty of items also increased proportionately. At the fourth grade level, the scores ranged from poor to satisfactory in solving word problems with a poor rating on the item requiring the translation of words to symbols. Overall performance for seventh and tenth graders was satisfactory with difficulties encountered on the ratio-proportion items. Twelfth graders exhibited good performance overall. However, both tenth and twelfth graders evidenced weaknesses in the area of consumer mathematics.

EDUCATIONAL ASSESSMENT PROGRAM
1975 - 76
PART III

DATA INTERPRETATIONS

STATE OF NEW JERSEY - DEPARTMENT OF EDUCATION
Division of Research, Planning and Evaluation
Educational Assessment Program

STATE REPORT

GRADE: FOUR - READING

CLUSTER: VOCABULARY

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
1	Basic sight vocabulary	97	Very satisfactory	The performance on this cluster which consisted of easy words, was very satisfactory.
2		96	Very satisfactory	
3		96	Very satisfactory	
4		94	Very satisfactory	
5		96	Very satisfactory	
6		96	Very satisfactory	
7		97	Very satisfactory	
8		95	Very satisfactory	
9		97	Very satisfactory	
10		97	Very satisfactory	

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STATE REPORT

GRADE: FOUR - READING

CLUSTER: PHONETIC ANALYSIS

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
24	Short vowels	60	Satisfactory	In general the performance on phonics skills was considered to be satisfactory. However, specific weaknesses appeared in the decoding of words which contained dipthongs and silent consonants. Incorrect responses on these items indicated an over-reliance on visual clues. Performance on the short vowel item #24 was rated satisfactory after recognition was given to the confusion students might have encountered when matching the sound of the short "a" vowel in the clue word, "hatch" with that of the correct response, "plan." Although "plan" follows the short vowel principle, local pronunciation alters the sound of the letter "a" in this word.
27		85	Satisfactory	
29		87	Satisfactory	
21	Long vowels	83	Satisfactory	
23		80	Satisfactory	
28		86	Satisfactory	
22	Vowel digraphs	88	Satisfactory	
26		89	Satisfactory	
31		77	Marginally satisfactory	
25	Vowel diphthongs	69	Marginally satisfactory	
33		81	Satisfactory	
34		59	Poor	
11	Initial consonants	95	Satisfactory	
12		94	Satisfactory	
13		90	Satisfactory	

STATE REPORT

GRADE: FOUR - READING

CLUSTER: PHONETIC ANALYSIS (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
16	Final consonants	97	Very satisfactory	
17		94	Satisfactory	
18		94	Satisfactory	
14	Consonant blends and digraphs	95	Satisfactory	
15		88	Marginally satisfactory	
19		95	Satisfactory	
20		93	Satisfactory	
36	Silent consonants	66	Unsatisfactory	
37		85	Satisfactory	
38		59	Poor	
30	Variant sounds	89	Satisfactory	
32		70	Marginally satisfactory	
35		81	Satisfactory	

STATE REPORT

GRADE: FOUR - READING

CLUSTER: STRUCTURAL ANALYSIS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
39	Syllabication	90	Satisfactory	Recognition and use of structural units of words were generally satisfactory with the exception of plurals requiring the knowledge of spelling rules. Strengths were noted on specific items measuring knowledge of root words, contractions and syllabication.
40		96	Very satisfactory	
41		89	Satisfactory	
42		85	Satisfactory	
52	Roots	94	Very satisfactory	
53		83	Satisfactory	
54		63	Marginally satisfactory	
43	Prefixes	88	Satisfactory	
44		85	Satisfactory	
45	Plurals	59	Poor	
46		78	Marginally satisfactory	
47	Compound words	82	Marginally satisfactory	
48		87	Satisfactory	

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STATE REPORT

GRADE: FOUR - READING

CLUSTER: STRUCTURAL ANALYSIS (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
49	Contractions	96	Very satisfactory	
50		73	Marginally satisfactory	
51		94	Very satisfactory	

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GRADE: FOUR - READING

CLUSTER: WORD RECOGNITION/APPLICATION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
61	Context clues	95	Satisfactory	Performance on word recognition and application which includes context clues, synonyms, and antonyms was satisfactory to very satisfactory. Specific strength was demonstrated in the category of synonyms. One item measuring context clues, where performance was marginally satisfactory, was deemed to be a poor item.
62		92	Satisfactory	
63		91	Satisfactory	
64		74	Marginally satisfactory	
65		90	Satisfactory	
66		91	Satisfactory	
55	Synonyms	96	Very satisfactory	
56		95	Very satisfactory	
57		89	Satisfactory	
58	Antonyms	96	Very satisfactory	
59		89	Satisfactory	
60		90	Satisfactory	

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STATE REPORT

GRADE: FOUR - READING

CLUSTER: LITERAL COMPREHENSION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
78	Identifying main ideas	88	Satisfactory	The Literal Comprehension Cluster, which measured identifying main idea, identifying information and order and sequence, resulted in minimally satisfactory performance. Specific weaknesses were noted in order and sequence and identifying information, while satisfactory performance was noted in identifying main idea.
79		91	Satisfactory	
83		81	Satisfactory	
77	Identify information	90	Satisfactory	
81		75	Marginally satisfactory	
84		88	Satisfactory	
93		77	Marginally satisfactory	
80	Order and sequence	82	Satisfactory	
90		76	Marginally satisfactory	
94		45	Poor	
95		57	Poor	

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STATE REPORT

GRADE: FOUR - READING **CLUSTER:** INTERPRETATION

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
82	Interpret emotions	91	Satisfactory	The students' ability to interpret material read was generally satisfactory. However, poor performance was shown in predicting outcomes.
86		82	Satisfactory	
87	Predicting outcomes	60	Poor	
91		49	Poor	
88	Determine fact, fiction	81	Satisfactory	
92		75	Marginally satisfactory	
85	Determine motives	83	Satisfactory	
89		85	Satisfactory	

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STATE REPORT

GRADE: FOUR - READING **CLUSTER:** STUDY SKILLS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
70	Using dictionary guide words	65	Unsatisfactory	Proficiencies in applying study skills reflected wide differences. Alphabetic sequence skills were generally satisfactory. However, there were manifest weaknesses in using a glossary and dictionary guide words. Performance on items measuring usage of the table of contents was inconsistent.
71		72	Marginally satisfactory	
72		53	Unsatisfactory	
67	Alphabetic sequence	90	Satisfactory	
68		93	Satisfactory	
69		93	Satisfactory	
75	Table of contents	82	Satisfactory	
76		60	Poor	
73	Using glossary	75	Marginally satisfactory	
74		65	Unsatisfactory	

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STATE REPORT

COMMUNITY TYPES

GRADE: FOUR - READING

CLUSTER: VOCABULARY

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
1	Basic sight vocabulary	98	95	98	98	98	98	97	97	
2		98	93	98	98	98	97	97	96	
3		98	92	97	98	98	97	96	96	
4		97	88	96	97	96	96	95	95	
5		98	92	97	98	97	97	97	96	
6		98	93	97	98	98	97	97	96	
7		98	94	98	98	98	98	97	97	
8		97	90	96	97	97	96	94	95	
9		98	93	98	98	98	98	97	97	
10		99	94	98	99	98	98	97	97	

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STATE REPORT

COMMUNITY TYPES

GRADE: FOUR - READING

CLUSTER: PHONETIC ANALYSIS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
24	Short vowels	67	48	63	70	64	61	58	53	
27		92	71	89	93	90	87	84	82	
29		92	79	89	92	90	89	87	86	
21	Long vowels	91	70	87	91	87	86	84	82	
23		89	66	85	89	85	81	75	75	
28		92	74	89	93	90	88	85	85	
22	Vowel digraphs	93	78	91	93	91	90	89	88	
26		94	78	92	95	92	91	89	87	
31		86	61	81	86	82	80	79	75	
25	Vowel dipthongs	76	54	73	78	74	70	68	67	
33		90	64	85	90	86	84	80	78	
34		68	43	62	69	64	61	60	59	
11	Initial consonants	97	89	97	98	97	96	96	96	
12		95	89	95	96	95	95	94	94	
13		94	85	92	93	92	91	91	89	

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COMMUNITY TYPES

GRADE: FOUR - READING

CLUSTER: PHONETIC ANALYSIS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
16	Final consonants	99	92	98	99	98	98	97	97	
17		97	87	96	97	97	96	95	95	
18		97	87	96	97	96	95	94	95	
14	Consonant blends and digraphs	97	90	96	97	97	96	95	95	
15		92	79	91	93	91	90	90	90	
19		98	89	97	98	97	97	96	96	
20		97	85	96	97	96	95	93	93	
36	Silent consonants	76	49	71	77	72	68	67	64	
37		90	76	87	91	87	85	85	84	
38		68	39	63	70	66	60	60	53	
30	Variant sounds	95	78	93	95	93	91	88	88	
32		80	52	74	79	76	72	70	63	
35		88	69	85	88	86	82	79	78	

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COMMUNITY TYPES

GRADE: FOUR - READING

CLUSTER: STRUCTURAL ANALYSIS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
39	Syllabication	93	86	90	93	91	89	88	90	
40		98	92	96	98	97	97	95	96	
41		92	78	92	94	92	91	89	89	
42		89	75	88	90	88	87	85	85	
52	Roots	96	88	95	97	96	95	93	95	
53		89	71	86	89	86	85	81	84	
54		73	50	65	71	67	66	62	61	
43	Prefixes	95	74	92	95	93	91	88	90	
44		88	78	87	89	87	87	83	83	
45	Plurals	70	52	58	65	62	62	55	58	
46		84	72	78	82	80	78	76	76	
47	Compound words	86	74	84	87	84	84	82	83	
48		90	82	89	90	88	88	86	87	

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COMMUNITY TYPES

GRADE: FOUR - READING

CLUSTER: STRUCTURAL ANALYSIS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
49	Contractions	98	92	97	98	97	97	96	96	
50		77	65	76	78	76	75	73	73	
51		97	90	96	97	96	96	94	94	

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COMMUNITY TYPES

GRADE: FOUR - READING

CLUSTER: WORD RECOGNITION/APPLICATION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
61	Context clues	97	88	97	98	97	96	95	95	
62		96	83	95	96	95	93	91	92	
63		95	83	94	96	94	93	91	91	
64		86	52	79	86	83	83	77	78	
65		94	79	93	95	93	91	88	88	
66		96	82	94	96	94	93	89	91	
55	Synonyms	98	90	98	99	98	97	96	96	
56		98	88	97	98	97	97	94	96	
57		95	79	92	94	93	92	89	89	
58	Antonyms	99	90	98	99	98	98	96	97	
59		93	77	92	94	93	92	88	90	
60		95	78	94	96	94	93	90	91	

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COMMUNITY TYPES

GRADE: FOUR - READING

CLUSTER: LITERAL COMPREHENSION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
78	Identifying main ideas	93	77	91	94	92	90	87	87	
79		94	82	93	95	94	93	89	89	
83		87	70	84	88	85	82	80	80	
77	Identifying information	95	81	93	95	94	92	90	90	
81		81	63	78	82	79	78	74	73	
84		93	77	91	94	91	90	86	87	
93		85	61	82	86	83	79	76	75	
80	Order and sequence	89	67	87	90	88	85	81	80	
90		83	62	80	83	81	79	76	75	
94		51	35	47	51	49	47	47	44	
95		64	43	60	65	61	59	55	54	

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COMMUNITY TYPES

GRADE: FOUR - READING

CLUSTER: INTERPRETATION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
82	Interpret emotions	93	84	93	94	93	91	89	89	
86		88	68	86	89	86	84	80	82	
87	Predicting outcomes	68	45	63	68	65	62	60	58	
91		55	36	52	56	53	50	48	49	
88	Determine fact, fiction	89	66	85	89	86	84	81	82	
92		83	59	79	84	80	77	72	73	
85	Determine motives	89	71	86	90	86	85	81	83	
89		91	73	89	91	89	87	83	83	

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COMMUNITY TYPES

GRADE: FOUR - READING

CLUSTER: STUDY SKILLS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
70	Using dictionary guide words	71	55	66	72	68	64	62	64	
71		76	63	74	77	76	72	69	71	
72		58	40	55	60	57	53	52	51	
67	Alphabetic sequence	94	82	92	94	93	92	91	92	
68		96	87	96	97	96	95	93	95	
69		97	85	95	97	96	95	92	94	
75	Table of contents	88	69	86	89	86	83	80	80	
76		67	46	64	68	64	61	60	59	
73	Using glossary	81	60	78	83	80	78	73	74	
74		71	50	68	73	70	66	62	63	

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DISTRICT FACTOR GROUPINGS

GRADE: FOUR - READING

CLUSTER: VOCABULARY

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
1	- Basic sight vocabulary	95	97	97	98	98	98	98	98	98	99		98
2		92	96	97	97	97	98	98	98	98	98		98
3		92	95	97	97	97	98	98	98	98	98		98
4		88	94	94	96	96	97	97	97	97	97		96
5		92	95	97	97	97	98	98	98	98	98		98
6		92	96	97	97	97	98	98	98	98	98		97
7		93	97	97	98	98	99	98	98	98	99		98
8		89	94	95	96	96	97	97	97	97	97		96
9		93	96	97	98	98	99	98	98	98	99		98
10		94	97	98	98	98	99	98	99	99	99		99

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: FOUR - READING

CLUSTER: PHONETIC ANALYSIS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
24	Short vowels	45	56	56	62	64	65	66	68	70	71		62
27		69	82	85	89	90	90	91	92	92	93		87
29		77	85	86	90	90	91	90	92	91	93		88
21	Long vowels	68	81	84	87	88	88	89	89	90	91		87
23		64	76	78	84	85	86	87	87	90	90		81
28		72	83	85	90	89	90	91	91	92	94		88
22	Vowel digraphs	77	86	88	91	91	92	92	93	93	93		90
26		77	87	89	92	93	94	93	94	95	95		92
31		59	73	76	81	82	83	84	85	86	87		80
25	Vowel diphthongs	52	64	68	73	74	74	75	77	78	80		72
33		62	77	80	85	87	87	87	88	89	90		86
34		41	55	58	63	64	64	65	67	67	71		60
11	Initial consonants	88	94	95	97	97	97	98	98	98	98		96
12		88	92	93	95	96	95	96	96	96	96		95
13		84	89	90	92	93	92	94	92	92	93		91

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GRADE: FOUR - READING

CLUSTER: PHONETIC ANALYSIS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
16	Final consonants	91	96	97	98	98	98	99	99	99	99		98
17		86	93	95	97	97	97	97	97	97	97		97
18		86	93	95	96	96	97	97	97	97	97		96
14	Consonant blends and digraphs	89	94	95	96	96	97	97	96	97	97		97
15		78	87	89	91	92	92	92	92	92	92		91
19		88	94	96	97	97	97	97	97	98	98		97
20		84	92	93	96	96	96	97	96	97	97		94
36	Silent consonants	47	61	65	70	71	72	74	74	77	79		69
37		74	82	84	88	87	88	88	89	90	91		86
38		37	52	56	61	65	65	69	68	71	72		62
30	Variant sounds	77	86	89	92	93	94	94	94	95	96		92
32		50	63	67	72	76	76	78	78	80	81		74
35		68	78	79	84	85	86	87	87	89	89		84

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DISTRICT FACTOR GROUPINGS

GRADE: FOUR - READING

CLUSTER: STRUCTURAL ANALYSIS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
39	Syllabication	86	88	87	90	90	91	92	93	93	93		90
40		92	95	95	97	96	97	97	97	98	98		97
41		77	87	88	91	91	92	93	93	94	94		91
42		74	84	85	87	88	89	89	90	90	90		86
52	Roots	88	93	94	96	96	96	96	96	97	97		96
53		70	81	81	85	86	87	88	88	90	91		85
54		49	61	60	67	65	67	68	68	70	72		66
43	Prefixes	72	86	88	92	93	93	94	94	95	96		93
44		77	83	84	87	87	88	88	88	90	89		87
45	Plurals	51	55	55	61	63	61	62	64	65	66		62
46		71	75	76	80	81	81	81	80	82	83		80
47	Compound words	74	80	81	84	84	84	85	85	86	87		83
48		82	86	87	89	89	88	89	89	89	96		87

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GRADE: FOUR - READING

CLUSTER: STRUCTURAL ANALYSIS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
49	Contractions	92	96	96	98	97	98	98	98	98	98		98
50		63	72	73	76	77	77	77	77	77	79		75
51		89	94	94	96	96	97	97	97	97	97		96

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DISTRICT FACTOR GROUPINGS

GRADE: FOUR - READING

CLUSTER: WORD RECOGNITION/APPLICATION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
61	Context Clues	87	93	94	97	97	98	98	98	98	98		96
62		82	91	92	94	95	95	96	96	96	97		94
63		82	90	91	94	94	95	95	95	96	96		94
64		49	70	72	81	81	84	84	85	86	88		82
65		77	87	89	93	93	94	94	95	96	96		91
66		81	89	91	94	94	95	95	96	96	97		92
55	Synonyms	90	95	96	98	98	98	98	98	99	99		97
56		87	94	95	97	97	98	98	98	98	98		97
57		77	88	89	92	93	94	93	94	95	95		92
58	Antonyms	90	95	96	98	98	98	98	98	99	99		98
59		76	86	88	91	93	94	93	94	94	95		92
60		77	88	89	94	94	95	95	95	96	96		94

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GRADE: FOUR - READING

CLUSTER: LITERAL COMPREHENSION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
78	Identifying main ideas	75	85	87	91	91	93	92	93	94	95		90
79		81	89	90	93	93	94	94	95	95	96		92
83		68	78	80	84	84	86	86	86	88	89		83
77	Identify information	79	88	90	93	93	94	94	95	96	96		93
81		61	72	73	78	78	80	80	80	82	83		77
84		75	85	88	91	91	93	92	93	95	95		89
93		59	74	77	81	81	84	84	84	87	88		80
80	Order and sequence	65	79	82	86	87	88	88	89	90	92		87
90		61	72	75	79	79	82	81	82	85	85		79
94		33	42	45	46	47	50	49	50	52	54		46
95		41	52	55	59	59	63	62	63	67	69		57

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: FOUR – READING

CLUSTER: INTERPRETATION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
82	Interpret emotions	82	88	90	93	92	93	93	94	94	95		92
86		67	78	81	85	85	88	87	88	90	90		85
87	Predicting outcomes	43	55	58	62	63	67	66	66	70	70		62
91		34	44	47	51	52	54	54	55	57	59		51
88	Determine fact, fiction	64	77	80	85	85	87	87	88	89	91		85
92		56	70	73	78	77	82	81	82	85	87		78
85	Determine motives	70	79	81	86	85	88	88	89	91	91		86
89		72	82	84	88	87	90	90	90	92	93		87

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GRADE: FOUR - READING

CLUSTER: STUDY SKILLS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
70	Using dictionary guide words	54	62	62	67	65	68	70	71	73	74		62
71		61	69	70	75	72	75	76	78	78	78		71
72		39	49	50	55	53	57	58	60	61	62		50
67	Alphabetic sequence	81	90	90	92	93	94	93	94	94	94		92
68		86	93	93	96	95	97	96	96	97	97		95
69		84	92	93	95	94	96	96	96	96	97		95
75	Table of contents	67	78	81	84	85	87	87	88	90	91		83
76		44	55	58	62	64	64	66	67	70	70		61
73	Using glossary	58	71	72	78	79	81	81	82	84	86		79
74		49	59	62	68	67	70	71	71	74	76		65

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STATE REPORT

GRADE: SEVEN - READING

CLUSTER: PHONETIC ANALYSIS

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
1	Short and long vowels	69	Poor	Students' performance on the Phonetic Analysis cluster was considered to be marginally satisfactory. Although satisfactory performance was observed in the ability to identify consonant sounds, there were weaknesses in the ability to decode blends and digraphs. The performance on vowel sounds was inconsistent.
2		91	Satisfactory	
3	Single consonants	87	Satisfactory	
4	Consonant blends and digraphs	61	Poor	
5		51	Poor	
6	Vowel digraphs, diphthongs	94	Satisfactory	
7		71	Marginally satisfactory	
8	Silent consonants	91	Satisfactory	

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GRADE: SEVEN - READING

CLUSTER: STRUCTURAL ANALYSIS

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
9	Roots	85	Satisfactory	Performance on this cluster was generally satisfactory. Students' performed poorly on the item measuring knowledge of prefixes. Very satisfactory performance was noted on syllabication and accent. Unsatisfactory to poor performance on items measuring students ability to deal with contraction and suffixes appeared to be related to the nature of the items.
10		87	Satisfactory	
11	Suffixes	81	Satisfactory	
12		50	Poor	
13	Prefixes	57	Poor	
14	Compound words	87	Satisfactory	
15	Syllabication/accent	94	Very satisfactory	
16	Possessives	80	Marginally satisfactory	
17	Contractions	63	Unsatisfactory	
18	Plurals	90	Satisfactory	

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GRADE: SEVEN - READING

CLUSTER: WORD USAGE

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
19	Synonyms	85	Marginally satisfactory	The performance of students here was deemed satisfactory. Exceptions to this were noted in multiple meanings and homonyms, where performance was marginally satisfactory.
20		86	Satisfactory	
21		89	Satisfactory	
24	Multiple meanings	74	Marginally satisfactory	
25		89	Satisfactory	
26		62	Unsatisfactory	
27	Homonyms	88	Satisfactory	
28		75	Marginally satisfactory	
29		68	Unsatisfactory	
30	Antonyms	92	Satisfactory	
31		74	Marginally satisfactory	
32		85	Satisfactory	

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GRADE: SEVEN - READING

CLUSTER: LITERAL COMPREHENSION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
22	Contextual clues	88	Satisfactory	Student performance on the Literal Comprehension cluster was satisfactory. Responses varied in both the contextual clues and locating information sections. Specifically, marginally satisfactory to satisfactory performance was demonstrated in the contextual clues section. Two unsatisfactory responses and one poor response were included in the twenty items of the locating information section. However, two of the items on which unsatisfactory performance was demonstrated, appeared to be inadequate.
23		84	Satisfactory	
49		71	Marginally satisfactory	
87		74	Marginally satisfactory	
34	Locate information	80	Satisfactory	
36		93	Satisfactory	
37		92	Satisfactory	
38		88	Satisfactory	
39		61	Unsatisfactory	
40		77	Marginally satisfactory	
42		90	Satisfactory	
43		80	Satisfactory	
50		75	Marginally satisfactory	
51		86	Satisfactory	

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GRADE: SEVEN - READING

CLUSTER: LITERAL COMPREHENSION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
52	Locate information	45	Unsatisfactory	
54		86	Satisfactory	
55		82	Satisfactory	
56		87	Satisfactory	
60		80	Marginally satisfactory	
61		79	Marginally satisfactory	
63		72	Marginally satisfactory	
80		81	Satisfactory	
88		55	Poor	
89		71	Marginally satisfactory	

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GRADE: SEVEN - READING **CLUSTER:** ORGANIZATION

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
35	Main idea/summary	63	Unsatisfactory	Organizational skills were unsatisfactory with the exception of two main idea summary items. Performance demonstrated on the sequence items was weak.
46		90	Satisfactory	
53		76	Satisfactory	
59		67	Unsatisfactory	
90		74	Marginally satisfactory	
47	Sequence of events	77	Marginally satisfactory	
58		49	Poor	
64		65	Unsatisfactory	
86		72	Marginally satisfactory	

STATE REPORT

GRADE: SEVEN - READING

CLUSTER: INTERPRETATION

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
33	Character interpretation	71	Unsatisfactory	Generally unsatisfactory performance was noted here. Only two items were satisfactory. Inadequacies were noted in drawing inferences and interpreting illustrative material.
41		80	Satisfactory	
44	Drawing inferences	70	Marginally satisfactory	
48		58	Poor	
57		58	Poor	
45	Prediction of outcome	86	Satisfactory	
65		61	Poor	
62	Fact, fiction, opinion	48	Poor	
85		75	Marginally satisfactory	
82	Interpretation of illustrative materials	69	Unsatisfactory	
83		74	Marginally satisfactory	
84		79	Marginally satisfactory	

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GRADE: SEVEN - READING

CLUSTER: STUDY SKILLS

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
66	Glossary	76	Marginally satisfactory	Strength in study skills performance was noted only on alphabetizing. Performance in all other areas was marginally satisfactory to poor, with glaring weaknesses demonstrated in the ability to follow directions and general weaknesses observed in the use of the glossary, table of contents, and index.
74		50	Poor	
67	Library skills	76	Marginally satisfactory	
68		79	Marginally satisfactory	
69	Alphabetizing	89	Satisfactory	
70		84	Satisfactory	
71	Dictionary skills	73	Unsatisfactory	
72		67	Unsatisfactory	
73	Table of contents	49	Poor	
75		77	Marginally satisfactory	
76	Index	50	Poor	
77		80	Satisfactory	
78		72	Marginally satisfactory	

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STATE REPORT

GRADE: SEVEN - READING

CLUSTER: STUDY SKILLS (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
79	Following directions	50	Poor	
81		56	Poor	

STATE OF NEW JERSEY DEPARTMENT OF EDUCATION
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STATE REPORT

COMMUNITY TYPES

GRADE: SEVEN - READING

CLUSTER: PHONETIC ANALYSIS

ITEM NO	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
1	Short and long vowels	75	50	73	80	74	70	66	60	56
2		95	80	93	96	94	93	90	91	90
3	Single consonants	91	74	90	93	91	88	86	85	85
4	Consonant blends and digraphs	68	44	64	72	66	62	62	56	57
5		52	46	52	56	52	50	47	47	51
6	Vowel digraphs/dipthongs	96	87	95	97	96	95	94	94	92
7		79	49	75	83	77	73	70	63	64
8	Silent consonants	94	83	93	96	94	92	91	91	90

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STATE REPORT

COMMUNITY TYPES

GRADE: SEVEN - READING

CLUSTER: STRUCTURAL ANALYSIS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
9	Roots	88	77	87	90	88	86	87	84	84
10		89	78	88	91	90	87	86	87	85
11	Suffixes	88	62	86	90	87	85	81	79	81
12		56	29	53	63	56	54	48	48	46
13	Prefixes	61	45	59	65	61	57	55	53	51
14	Compound words	88	82	88	90	89	87	86	86	85
15	Syllabication/accent	95	90	96	96	96	95	93	95	95
16	Possessives	83	70	83	84	83	81	78	81	80
17	Contractions	68	50	65	71	67	66	64	63	63
18	Plurals	91	84	92	93	92	90	89	91	88

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STATE REPORT

COMMUNITY TYPES

GRADE: SEVEN - READING

CLUSTER: WORD USAGE

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
19	Synonyms	91	65	89	94	91	88	81	86	86
20		91	73	89	93	90	87	85	83	81
21		92	78	91	94	92	90	86	89	88
24	Multiple meanings	80	59	77	82	78	76	70	71	71
25		92	79	91	94	92	91	88	88	89
26		67	46	64	72	66	63	57	57	53
27	Homonyms	91	80	90	93	91	89	86	88	88
28		79	63	78	82	79	77	72	74	70
29		73	54	71	76	72	70	63	65	63
30	Antonyms	95	83	94	96	95	93	91	92	91
31		82	50	81	87	81	76	71	67	69
32		93	62	90	94	92	89	86	86	82

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COMMUNITY TYPES

GRADE: SEVEN - READING

CLUSTER: LITERAL COMPREHENSION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
22	Contextual clues	92	76	91	94	92	89	87	88	87
23		91	65	88	92	89	85	82	82	81
49		74	60	73	77	74	73	68	70	69
87		78	61	77	81	78	75	72	73	70
34	Locate information	83	72	82	85	82	80	78	80	79
36		96	83	96	97	96	93	90	92	94
37		94	83	94	96	95	93	92	93	94
38		91	76	91	93	92	89	87	88	89
39		66	45	64	71	66	61	56	55	51
40		83	57	82	88	84	79	75	75	77
42		92	82	92	95	93	91	89	91	91
43		85	66	82	88	85	83	80	81	81
50		80	61	78	83	80	79	74	77	76
51		89	74	89	92	90	88	85	87	84
52		48	35	47	51	48	47	45	45	43

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COMMUNITY TYPES

GRADE: SEVEN - READING

CLUSTER: LITERAL COMPREHENSION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
54	Locate information	88	78	89	91	89	87	84	86	85
55		85	70	85	89	86	83	79	80	81
56		89	79	89	92	90	88	84	86	86
60		83	70	83	86	83	81	78	80	78
61		83	63	82	87	83	81	77	79	78
63		77	58	75	81	76	74	70	69	68
80		87	63	85	91	88	85	80	81	79
88		59	39	58	65	59	55	53	52	52
89		74	59	74	79	76	72	70	71	71

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COMMUNITY TYPES

GRADE: SEVEN - READING

CLUSTER: ORGANIZATION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
35	Main idea/summary	65	54	64	69	67	65	61	64	63
46		92	82	92	95	93	91	88	90	91
53		80	63	79	83	80	78	73	75	75
59		75	47	71	79	73	69	64	64	62
90		78	60	76	82	78	73	71	71	72
47	Sequence of events	80	67	78	82	80	79	76	76	76
58		52	39	51	57	52	49	46	45	44
64		70	49	68	74	69	66	62	64	61
86		76	58	75	80	76	74	70	69	72

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COMMUNITY TYPES

GRADE: SEVEN - READING

CLUSTER: INTERPRETATION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
33	Character interpretation	75	58	73	79	75	73	71	71	69
41		81	70	83	85	83	81	79	80	79
44	Drawing inferences	74	58	73	77	74	72	71	71	70
48		61	47	60	66	62	60	55	59	60
57		63	40	61	69	64	60	57	53	54
45	Prediction of outcome	89	77	88	91	89	86	84	86	87
65		65	47	64	70	66	63	57	60	59
62	Fact, fiction, opinion	52	35	50	57	52	48	43	46	41
85		80	55	79	86	81	76	71	73	73
82	Interpret illustrative material	74	52	71	79	75	72	66	71	63
83		79	56	77	84	80	78	74	74	70
84		84	62	83	88	85	81	78	80	77

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COMMUNITY TYPES

GRADE: SEVEN - READING

CLUSTER: STUDY SKILLS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
66	Glossary	79	64	78	81	80	78	72	74	71
74		52	42	51	55	53	48	47	49	47
67	Library skills	82	61	78	84	82	75	76	75	83
68		84	66	83	86	83	76	75	73	78
69	Alphabetizing	91	82	90	93	91	89	87	89	88
70		87	76	85	89	87	84	83	84	85
71	Dictionary skills	78	60	76	81	78	76	71	71	71
72		72	50	70	76	72	69	66	65	65
73	Table of contents	52	38	51	55	51	51	47	50	46
75		80	66	80	84	81	78	76	76	74
76	Index	55	34	52	60	54	53	51	50	46
77		83	69	82	86	82	80	77	80	78
78		76	60	73	79	74	74	69	71	68
79	Following directions	56	36	52	60	55	52	49	49	45
81		63	37	59	68	63	59	58	55	50

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: SEVEN - READING

CLUSTER: PHONETIC ANALYSIS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
1	Short and long vowels	47	62	66	70	71	74	77	78	81	81	56	70
2		79	88	91	93	94	95	95	95	96	96	90	93
3	Single consonants	73	83	86	89	90	90	91	92	93	94	85	90
4	Consonants blends and digraphs	40	55	59	63	65	66	68	69	72	73	57	62
5		45	48	49	50	52	54	53	54	55	57	51	51
6	Vowel digraphs, diphthongs	85	93	93	95	96	96	96	96	97	97	92	94
7		45	64	68	73	75	76	80	80	85	85	64	75
8	Silent consonants	81	89	91	93	94	94	95	95	96	96	90	92

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: SEVEN - READING

CLUSTER: STRUCTURAL ANALYSIS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
9	Roots	76	82	85	86	87	88	89	88	90	91	84	87
10		77	84	86	87	89	89	90	90	91	92	85	87
11	Suffixes	61	76	82	84	86	87	88	88	90	91	81	87
12		27	41	46	50	53	55	57	60	64	67	46	54
13	Prefixes	43	52	55	58	58	61	62	62	66	69	51	56
14	Compound words	81	85	87	88	88	89	89	88	89	90	85	88
15	Syllabication/accent	90	94	94	95	95	95	96	96	97	96	95	95
16	Possessives	69	78	80	81	82	82	84	84	85	85	80	79
17	Contractions	47	59	62	65	66	65	68	68	72	74	63	67
18	Plurals	83	88	89	91	91	92	92	93	93	94	88	90

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: SEVEN - READING

CLUSTER: WORD USAGE

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
19	Synonyms	63	79	84	88	89	91	93	93	95	95	86	88
20		71	81	85	88	89	90	91	92	93	94	81	88
21		76	86	88	91	91	91	92	93	94	95	88	91
24	Multiple meanings	57	69	73	75	77	78	79	80	83	83	71	78
25		77	86	88	90	91	91	93	93	94	95	89	91
26		44	56	58	62	63	65	66	70	73	76	53	66
27	Homonyms	79	86	88	89	90	90	91	92	93	93	88	90
28		61	71	73	77	78	79	79	81	82	83	70	77
29		52	62	66	70	71	71	73	74	77	79	63	72
30	Antonyms	82	90	91	94	95	95	95	96	96	97	91	93
31		47	66	73	77	81	80	83	85	88	89	69	76
32		59	80	86	90	90	92	93	94	95	95	82	91

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: SEVEN - READING

CLUSTER: LITERAL COMPREHENSION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
22	Contextual clues	75	85	88	90	91	91	93	94	94	95	87	90
23		63	79	83	87	88	88	90	91	93	94	81	87
49		59	68	69	72	72	74	74	76	77	79	69	75
87		60	69	72	75	76	77	78	80	82	83	70	76
34	Locate information	71	78	79	81	82	82	83	83	85	85	79	81
36		81	90	93	95	96	96	97	96	97	98	94	93
37		81	91	92	94	94	94	95	96	96	97	94	93
38		75	86	88	90	91	91	92	92	93	94	89	90
39		42	54	58	60	64	65	68	70	72	74	51	62
40		54	72	76	80	82	83	85	85	88	90	77	82
42		81	88	89	91	92	92	94	94	95	96	91	92
43		65	76	78	82	83	84	85	86	89	89	81	85
50		59	71	74	78	78	79	80	82	84	86	76	80
51		74	83	85	88	88	89	90	91	93	94	84	90

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: SEVEN - READING

CLUSTER: LITERAL COMPREHENSION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
52	Locate information	34	41	43	46	47	47	49	50	53	53	43	48
54		78	84	85	87	88	88	89	90	91	92	85	89
55		69	78	79	82	84	84	86	87	90	91	81	85
56		78	84	84	88	88	89	89	91	92	93	86	88
60		69	77	79	81	83	83	84	85	86	88	78	82
61		62	74	76	81	82	83	84	86	88	89	78	82
63		57	68	70	73	75	74	77	79	81	83	68	75
80		61	76	79	84	85	86	88	89	91	92	79	87
88		38	49	51	55	57	57	60	63	65	68	52	58
89		58	67	68	73	73	74	75	77	79	81	71	74

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: SEVEN - READING

CLUSTER: ORGANIZATION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
35	Main idea, summary	53	59	61	65	64	65	67	68	69	71	63	66
46		82	88	89	91	92	91	93	94	95	95	91	93
53		61	72	75	79	79	79	80	82	84	85	75	80
59		44	60	65	69	70	71	75	76	80	82	62	69
90		58	69	71	75	75	77	79	80	83	84	72	76
47	Sequence of events	65	73	75	78	78	78	80	81	82	84	76	80
58		37	44	47	50	50	51	53	55	58	60	44	50
64		48	60	62	66	67	68	70	71	74	77	61	67
86		57	68	68	73	74	75	77	79	81	82	72	74

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DISTRICT FACTOR GROUPINGS

GRADE: SEVEN - READING

CLUSTER: INTERPRETATION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
33	Character interpretation	56	67	69	73	73	73	76	77	80	81	69	75
41		69	78	80	82	83	82	83	84	85	86	79	81
44	Drawing inferences	57	67	69	71	73	73	74	75	78	78	70	73
48		46	54	56	59	59	59	63	64	65	68	60	62
57		38	50	54	58	60	63	65	68	70	73	54	61
45	Prediction of outcome	76	83	85	87	88	87	89	90	92	92	87	89
65		45	56	58	63	63	65	66	68	71	74	59	66
62	Fact, fiction, opinion	34	43	45	48	49	51	52	55	57	61	41	51
85		54	69	71	77	78	79	81	84	86	88	73	77
82	Interpret illustrative material	50	63	66	71	71	73	75	77	80	82	63	72
83		54	69	72	77	78	79	81	82	84	86	70	79
84		60	74	77	81	82	83	85	86	88	90	77	83

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: SEVEN - READING

CLUSTER: STUDY SKILLS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
66	Glossary	63	72	74	79	77	78	80	80	81	83	71	77
74		41	46	47	51	50	50	53	54	56	57	47	47
67	Library skills	58	71	72	81	79	79	81	84	85	86	83	74
68		63	74	77	81	81	84	85	85	88	88	78	75
69	Alphabetizing	81	87	86	90	90	90	91	92	93	94	88	91
70		75	81	82	85	86	85	87	88	90	89	85	85
71	Dictionary skills	59	70	72	75	77	77	79	79	81	82	71	77
72		48	63	65	69	71	72	73	73	76	78	65	72
73	Table of contents	37	46	47	50	51	51	52	53	55	58	46	51
75		65	74	75	79	79	80	81	83	84	86	74	79
76	Index	32	45	48	51	53	53	55	56	59	63	46	55
77		68	76	77	81	81	82	83	84	86	88	78	83
78		59	68	69	73	72	74	75	77	79	81	68	74
79	Following directions	34	44	47	51	52	53	55	57	60	63	45	52
81		35	50	53	58	58	61	64	66	68	71	50	58

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STATE REPORT

GRADE: TEN - READING

CLUSTER: WORD RECOGNITION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
1	Synonyms	92	Satisfactory	Performance on items in the word recognition cluster was generally satisfactory. Some inadequacies were noted in performance on synonyms and analogies. Use of context clues was satisfactory.
2		76	Marginally satisfactory	
3		91	Satisfactory	
4		76	Marginally satisfactory	
5		81	Satisfactory	
55	Antonyms	93	Satisfactory	
56		89	Satisfactory	
57		90	Satisfactory	
58		79	Marginally satisfactory	
59		68	Unsatisfactory	
6	Analogies	68	Unsatisfactory	
7		86	Satisfactory	
8		85	Satisfactory	
9		63	Unsatisfactory	

STATE REPORT

GRADE: TEN - READING

CLUSTER: WORD RECOGNITION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
28	Context clues	86	Satisfactory	
29		81	Satisfactory	
30		91	Satisfactory	
31		91	Satisfactory	
32		91	Satisfactory	
33		84	Satisfactory	
34		78	Marginally satisfactory	
35		87	Satisfactory	

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GRADE: TEN - READING

CLUSTER: READING COMPREHENSION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
17	Identify main idea	66	Unsatisfactory	Generally this cluster shows marginally satisfactory to unsatisfactory performance. The only satisfactory area is sequence of events. While gross weaknesses were evident in the areas of main idea, making inferences, drawing conclusions, recognizing tone and applying information; marginally satisfactory performance was demonstrated on supporting details. The conclusion is that tenth grade students do not extract enough meaning from what they read.
23		73	Marginally satisfactory	
44		86	Satisfactory	
49		66	Unsatisfactory	
67		57	Poor	
74		59	Poor	
15	Supporting details	91	Satisfactory	
16		89	Satisfactory	
18		91	Satisfactory	
21		76	Marginally satisfactory	
24		77	Marginally satisfactory	
25		81	Satisfactory	
68		83	Satisfactory	
69		64	Unsatisfactory	

STATE REPORT

GRADE: TEN - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
70	Supporting details	62	Unsatisfactory	
71		77	Marginally satisfactory	
72		58	Poor	
75		52	Poor	
76		76	Marginally satisfactory	
77		75	Marginally satisfactory	
45	Make inferences	79	Marginally satisfactory	
47		84	Satisfactory	
50		50	Poor	
78		55	Poor	
48	Drawing conclusions	76	Marginally satisfactory	
53		65	Unsatisfactory	
79		48	Poor	

STATE REPORT

GRADE: TEN - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
19	Sequence of events	50	Poor	
20		80	Satisfactory	
26		86	Satisfactory	
46		83	Satisfactory	
27	Recognize tone	77	Marginally satisfactory	
73		59	Poor	
80		70	Marginally satisfactory	
22	Applying information	60	Unsatisfactory	
54		54	Poor	
51	Cause, effect	82	Satisfactory	
52		60	Poor	

STATE OF NEW JERSEY - DEPARTMENT OF EDUCATION
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STATE REPORT

GRADE: TEN - READING

CLUSTER: STUDY SKILLS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
10	Dictionary skills	93	Satisfactory	Students' performance on the study skills cluster was generally satisfactory, although a glaring weakness was evident in card catalog skills. Particular strengths were noted in students' ability to read charts. Inconsistencies were observed on items measuring index and reference book skills.
11		70	Marginally satisfactory	
36	Reference books	67	Unsatisfactory	
66		85	Satisfactory	
60	Card catalog	83	Satisfactory	
61		56	Poor	
62		44	Poor	
37	Chart	94	Very satisfactory	
38		92	Satisfactory	
39		84	Satisfactory	
40		94	Very satisfactory	
12	Map	80	Marginally satisfactory	
13		95	Very satisfactory	
14		89	Satisfactory	

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STATE REPORT

GRADE: TEN - READING

CLUSTER: STUDY SKILLS (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
63	Index	77	Marginally satisfactory	
64		79	Marginally satisfactory	
65		64	Unsatisfactory	
41	Table of contents	94	Satisfactory	
42		90	Satisfactory	
43		81	Marginally satisfactory	

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STATE REPORT

COMMUNITY TYPES

GRADE: TEN - READING

CLUSTER: WORD RECOGNITION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
1	Synonyms	95	83	93	96	93	91	91	91	88
2		80	65	78	82	77	75	73	74	71
3		94	81	93	95	93	90	87	90	85
4		82	59	80	85	79	75	72	73	65
5		87	66	85	89	84	77	77	79	72
55	Antonyms	96	86	95	97	94	95	93	93	92
56		93	79	91	94	91	91	88	90	86
57		93	80	93	95	91	89	88	89	86
58		82	68	81	85	80	77	75	71	68
59		73	52	71	77	70	64	61	64	52
6	Analogies	76	48	71	78	69	66	68	66	55
7		89	78	87	90	87	86	88	83	81
8		90	70	88	91	89	87	85	84	80
9		71	46	66	72	67	62	65	60	54

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STATE REPORT

COMMUNITY TYPES

GRADE: TEN - READING

CLUSTER: WORD RECOGNITION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
28	Context clues	87	81	86	89	87	86	86	87	82
29		86	67	84	88	83	78	75	74	67
30		92	87	91	93	92	92	92	92	89
31		94	85	93	95	92	91	89	92	85
32		93	82	92	95	93	92	90	90	86
33		86	79	84	86	84	84	84	85	80
34		83	66	80	85	80	76	76	75	69
35		91	76	89	92	89	87	84	86	79

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STATE REPORT

COMMUNITY TYPES

GRADE: TEN - READING

CLUSTER: READING COMPREHENSION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
17	Identify main idea	72	52	69	75	68	64	64	63	53
23		78	62	75	80	75	74	72	71	60
44		88	78	87	90	87	85	85	84	78
49		71	53	68	73	68	64	65	64	53
67		59	51	58	62	56	56	58	58	51
74		63	49	61	66	60	59	58	55	48
15	Supporting details	94	85	93	94	92	91	91	91	88
16		91	81	90	92	90	89	89	89	84
18		92	88	91	92	91	90	91	91	88
21		80	64	78	82	77	76	73	76	67
24		81	66	79	83	79	78	76	77	68
25		86	68	83	88	84	84	81	79	69
68		87	72	85	89	84	83	83	81	74
69		70	50	66	73	65	61	60	65	49

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STATE REPORT

COMMUNITY TYPES

GRADE: TEN - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
70	Supporting details	67	49	64	70	64	61	60	56	49
71		81	67	79	83	78	75	77	74	69
72		63	47	59	66	59	58	54	54	48
75		56	43	54	60	52	48	49	52	39
76		81	66	79	83	77	76	77	73	66
77		79	66	77	82	75	74	74	72	64
45	Make inferences	83	70	80	84	80	78	79	78	69
47		86	77	86	88	85	84	83	84	76
50		53	42	51	57	51	50	51	51	39
78		57	48	57	59	54	55	54	53	50
48	Drawing conclusions	80	67	78	81	79	75	76	76	66
53		69	53	66	72	67	63	63	65	50
79		52	39	50	55	49	45	46	46	36
19	Sequence of events	55	37	52	58	51	50	50	48	37
20		82	72	82	84	80	79	78	82	71

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STATE REPORT

COMMUNITY TYPES

GRADE: TEN - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
26	Sequence of events	89	76	88	91	87	87	85	85	76
46		86	75	85	88	85	82	82	82	76
27	Recognize tone	81	68	79	83	78	78	78	79	69
73		63	51	61	65	60	58	55	58	49
80		74	59	72	78	71	66	66	66	57
22	Applying information	65	46	62	69	64	61	56	59	50
54		59	43	55	63	56	52	53	52	41
51	Cause, effect	85	72	83	88	83	82	81	81	73
52		64	49	61	67	61	60	59	62	48

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STATE REPORT

COMMUNITY TYPES

GRADE: TEN - READING

CLUSTER: STUDY SKILLS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
10	Dictionary skills	95	86	94	95	94	93	92	93	89
11		75	59	72	76	71	70	68	71	61
36	Reference books	74	48	71	79	69	57	60	58	51
66		88	78	87	90	86	85	84	86	82
60	Card catalog	85	78	83	86	83	81	82	80	81
61		62	45	58	64	59	50	51	50	47
62		50	29	46	55	45	37	36	35	27
37	Chart	95	91	95	96	94	95	94	95	93
38		94	86	93	94	92	92	90	89	88
39		86	80	85	87	85	83	83	84	82
40		95	89	95	96	95	94	94	95	92
12	Map	86	66	81	86	83	79	78	76	71
13		96	90	96	97	95	95	95	95	93
14		92	81	91	93	91	89	89	89	86

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STATE REPORT

COMMUNITY TYPES

GRADE: TEN - READING

CLUSTER: STUDY SKILLS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
63	Index	82	67	79	83	79	77	77	76	70
64		83	69	81	86	80	77	77	76	70
65		68	54	65	70	64	62	63	65	53
41	Table of contents	97	88	96	97	96	96	94	96	94
42		93	80	91	94	92	89	89	91	84
43		84	70	82	87	83	79	78	81	74

STATE REPORT

DISTRICT FACTOR GROUPINGS

GRADE: TEN - READING

CLUSTER: WORD RECOGNITION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
1	Synonyms	80	89	90	93	94	94	95	95	96	96	88	93
2		63	72	74	77	77	79	80	82	83	84	71	77
3		79	87	89	92	93	93	94	94	95	96	85	92
4		55	70	73	78	79	82	82	83	86	88	65	76
5		61	76	79	83	84	86	86	89	91	92	72	81
55	Antonyms	84	91	92	95	95	96	95	96	97	97	92	96
56		77	87	88	90	91	92	92	93	94	95	86	91
57		78	87	89	92	92	93	93	94	95	96	86	91
58		65	73	77	79	80	81	82	84	86	87	68	79
59		50	59	62	67	69	71	73	75	79	82	52	68
6	Analogies	44	60	63	69	70	74	74	75	80	83	55	75
7		76	83	83	87	87	88	89	89	90	91	81	88
8		66	81	85	88	88	89	89	89	91	91	80	90
9		42	58	59	65	65	68	69	69	74	77	54	67

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TEN - READING

CLUSTER: WORD RECOGNITION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
28	Context clues	81	84	84	85	86	86	87	88	89	91	82	88
29		64	76	79	82	83	85	85	86	88	90	67	83
30		86	90	90	91	92	92	92	92	93	94	89	92
31		84	89	89	92	92	93	93	94	95	96	85	92
32		80	88	89	92	92	93	94	94	95	96	86	93
33		79	82	83	84	83	85	85	85	87	87	80	81
34		63	74	75	79	80	82	82	84	86	87	69	78
35		74	83	84	88	89	89	90	91	93	94	79	85

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TEN - READING

CLUSTER: READING COMPREHENSION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
17	Identify main idea	49	60	61	66	67	71	71	72	76	79	53	63
23		59	70	69	73	74	76	77	78	81	83	60	74
44		77	83	83	87	87	87	88	88	90	92	78	87
49		50	62	62	66	68	69	70	71	74	77	53	68
67		51	55	53	56	58	59	59	59	61	64	51	59
74		47	55	56	58	60	62	62	64	66	69	48	60
15	Supporting details	83	89	90	93	93	93	94	94	94	95	88	90
16		79	86	87	90	90	91	92	92	92	94	84	88
18		88	89	89	90	91	91	92	91	92	93	88	92
21		62	72	73	76	77	78	79	80	82	85	67	71
24		63	74	74	78	79	80	80	82	84	87	68	82
25		65	78	78	82	83	85	85	86	88	91	69	83
68		70	80	80	83	85	85	86	87	89	91	74	87
69		47	59	60	63	66	68	68	70	73	78	49	63

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TEN - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
70	Supporting details	46	57	57	61	63	65	66	68	71	75	49	64
71		64	73	75	77	79	80	80	81	84	86	69	79
72		45	53	55	57	58	60	61	63	66	70	48	57
75		41	48	48	50	53	54	56	57	61	64	39	50
76		64	73	73	76	78	79	80	81	83	86	66	78
77		64	73	72	74	76	78	79	80	81	85	64	76
45	Make inferences	68	75	77	79	80	81	82	83	85	87	69	81
47		76	81	82	85	86	85	86	87	88	90	76	83
50		40	47	47	49	51	51	53	54	57	62	39	49
78		46	52	53	54	55	56	56	58	61	61	50	54
48	Drawing conclusions	65	74	73	77	78	79	80	80	82	84	66	83
53		50	60	61	63	66	68	69	69	73	78	50	65
79		37	44	44	47	49	50	51	53	56	59	36	43

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DISTRICT FACTOR GROUPINGS

GRADE: TEN - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
19	Sequence of events	34	46	46	50	51	53	55	56	59	62	37	50
20		70	76	77	79	81	82	83	83	85	87	71	77
26		74	83	83	87	88	89	89	90	91	93	76	87
46		74	80	80	83	85	86	86	87	88	90	76	83
27	Recognize tone	66	74	74	78	79	80	80	81	83	84	69	79
73		49	55	56	59	58	62	62	63	67	69	49	61
80		57	64	66	68	70	72	73	76	78	81	57	71
22	Applying information	43	55	55	60	61	64	64	67	70	72	50	63
54		41	49	50	53	55	57	58	60	62	68	41	55
51	Cause, effect	71	79	79	81	83	84	85	86	87	90	73	81
52		47	56	56	58	60	62	62	65	67	71	48	62

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TEN - READING

CLUSTER: STUDY SKILLS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
10	Dictionary skills	84	91	91	93	94	95	95	94	96	96	89	93
11		57	66	67	71	72	72	74	75	78	80	61	70
36	Reference books	44	58	61	67	70	69	73	75	81	83	51	69
66		76	82	83	86	87	87	87	88	90	92	82	87
60	Card catalog	77	81	81	83	83	85	85	86	84	86	81	84
61		41	51	53	55	58	59	61	64	66	66	47	60
62		27	34	38	43	43	48	49	53	56	59	27	43
37	Chart	90	93	93	95	95	95	95	95	96	96	93	96
38		85	90	91	93	93	94	93	93	94	95	88	92
39		79	83	83	85	84	86	86	86	87	88	82	82
40		88	93	93	95	95	95	95	96	96	97	92	96
12	Map	63	75	76	80	82	83	84	85	88	89	71	87
13		89	93	94	95	96	96	96	96	97	97	93	95
14		80	87	88	90	91	92	92	92	94	95	86	91

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STATE REPORT

DISTRICT FACTOR GROUPINGS

GRADE: TEN - READING

CLUSTER: STUDY SKILLS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
63	Index	64	73	75	79	79	80	81	82	84	86	70	76
64		66	75	75	80	80	82	82	84	86	88	70	78
65		52	61	61	65	65	67	67	68	70	73	53	62
41	Table of contents	87	93	94	95	96	96	96	97	97	97	94	95
42		79	86	87	91	92	93	93	93	94	95	84	90
43		67	77	78	81	83	84	85	85	86	88	74	80

STATE OF NEW JERSEY - DEPARTMENT OF EDUCATION
Division of Research, Planning and Evaluation
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STATE REPCRT

GRADE: TWELVE - READING

CLUSTER: WORD RECOGNITION

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
1	Synonyms	90	Satisfactory	Performance on this cluster, containing synonyms, antonyms, analogies and context clues was generally satisfactory. In comparison to the other categories, students demonstrated greater proficency in using context clues.
2		89	Satisfactory	
3		86	Satisfactory	
4		85	Satisfactory	
5		74	Marginally satisfactory	
55	Antonyms	84	Satisfactory	
56		71	Marginally satisfactory	
57		80	Satisfactory	
58		82	Satisfactory	
59		43	Poor	
6	Analogies	79	Marginally satisfactory	
7		89	Satisfactory	
8		91	Satisfactory	
9		75	Marginally satisfactory	

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STATE REPORT

GRADE: TWELVE - READING

CLUSTER: WORD RECOGNITION (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
28	Context clues	95	Very satisfactory	
29		95	Very satisfactory	
30		93	Satisfactory	
31		95	Very satisfactory	
32		87	Satisfactory	
33		88	Satisfactory	
34		88	Satisfactory	
35		48	Poor	

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STATE REPORT

GRADE: TWELVE - READING

CLUSTER: READING COMPREHENSION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
17	Identify main idea	75	Marginally satisfactory	Performance on the Reading Comprehension cluster was in general, unsatisfactory. Specifically, of the six items on reading to find the main idea five were either marginally satisfactory or unsatisfactory. Ability to draw inferences and conclusions and apply information ranged from poor to marginally satisfactory. Items measuring sequence of events, recognizing tone and cause, effect reflected wide differences in responses. The one exception to the cluster trend was in supporting details where responses were generally satisfactory.
23		70	Marginally satisfactory	
43		80	Satisfactory	
49		69	Unsatisfactory	
68		76	Marginally satisfactory	
75		66	Unsatisfactory	
15	Supporting details	94	Satisfactory	
16		92	Satisfactory	
18		92	Satisfactory	
21		83	Satisfactory	
24		62	Unsatisfactory	
26		59	Poor	
44		91	Satisfactory	
45		86	Satisfactory	

STATE REPORT

GRADE: TWELVE - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
50	Supporting details	74	Marginally satisfactory	
51		73	Marginally satisfactory	
52		73	Marginally satisfactory	
76		61	Unsatisfactory	
77		84	Satisfactory	
78		81	Satisfactory	
25	Make inferences	53	Poor	
46		78	Marginally satisfactory	
69		67	Unsatisfactory	
80		65	Unsatisfactory	
48	Drawing conclusions	48	Poor	
73		75	Marginally satisfactory	
79		57	Poor	

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STATE REPORT

GRADE: TWELVE - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
19	Sequence of events	61	Poor	
20		86	Satisfactory	
53		72	Marginally satisfactory	
71		62	Poor	
27	Recognize tone	91	Satisfactory	
47		77	Marginally satisfactory	
54		68	Unsatisfactory	
22	Applying information	70	Unsatisfactory	
74		67	Unsatisfactory	
70	Cause, effect	89	Satisfactory	
72		69	Unsatisfactory	

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GRADE: TWELVE - READING

CLUSTER: ✓ STUDY SKILLS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
10	Dictionary skills	63	Poor	Performance on this cluster was generally satisfactory. However, in view of the simplicity of the items, it appears that demonstrated ability is not commensurate to grade level expectations. Significant weakness is indicated in the use of the dictionary and the card catalog.
11		86	Satisfactory	
66	Reference books	77	Marginally satisfactory	
67		89	Satisfactory	
60	Card catalog	83	Satisfactory	
61		61	Unsatisfactory	
62		54	Poor	
36	Chart	94	Very satisfactory	
37		90	Satisfactory	
38		92	Satisfactory	
39		86	Satisfactory	
12	Map	73	Marginally satisfactory	
13		86	Satisfactory	
14		95	Very satisfactory	

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GRADE: TWELVE - READING

CLUSTER: STUDY SKILLS (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
63	Index	86	Satisfactory	
64		86	Satisfactory	
65		75	Marginally satisfactory	
40	Table of contents	97	Very satisfactory	
41		94	Very satisfactory	
42		87	Satisfactory	

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COMMUNITY TYPES

GRADE: TWELVE - READING

CLUSTER: WORD RECOGNITION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
1	Synonyms	93	81	92	94	93	90	89	88	85
2		91	81	90	92	91	88	89	91	81
3		88	80	87	90	88	85	84	86	80
4		88	74	86	90	87	85	85	82	74
5		78	61	76	80	76	73	69	67	60
55	Antonyms	88	69	86	91	87	81	81	81	72
56		74	62	72	76	71	69	68	66	59
57		84	69	83	87	81	77	77	75	66
58		85	74	84	86	82	80	80	81	72
59		46	36	45	49	43	43	39	38	34
6	Analogies	85	62	82	87	82	72	79	72	65
7		93	78	92	94	92	90	90	91	86
8		93	85	91	93	92	90	90	89	84
9		80	60	76	82	77	72	75	71	63

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COMMUNITY TYPES

GRADE: TWELVE - READING

CLUSTER: WORD RECOGNITION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
28	Context clues	96	90	96	97	96	94	95	95	92
29		96	93	96	96	96	96	96	96	93
30		95	87	94	96	94	91	93	92	87
31		96	92	96	97	96	94	94	95	90
32		90	80	89	91	88	85	84	86	79
33		91	80	90	92	89	86	86	82	77
34		89	87	88	89	88	89	86	90	85
35		52	38	48	57	49	46	42	42	36

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COMMUNITY TYPES

GRADE: TWELVE - READING

CLUSTER: READING COMPREHENSION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
17	Identify main idea	79	64	77	82	76	72	74	71	60
23		73	63	71	74	72	67	70	70	61
43		83	71	82	84	81	80	80	80	70
49		72	64	70	73	70	69	70	67	62
68		80	66	78	82	78	76	77	75	63
75		69	58	67	69	66	62	67	64	55
15	Supporting details	95	90	95	96	94	95	93	93	91
16		94	87	93	94	93	92	91	93	90
18		93	91	93	93	92	91	91	90	89
21		85	76	84	87	83	84	82	83	75
24		64	59	63	64	61	60	64	65	55
26		63	48	61	66	59	58	58	58	44
44		92	88	91	92	91	90	90	90	84
45		88	80	86	89	86	86	85	85	76
50		78	65	77	80	74	71	73	71	61

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STATE REPORT

COMMUNITY TYPES

GRADE: TWELVE - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
51	Supporting details	76	63	75	78	74	70	71	70	61
52		76	65	74	79	74	73	72	75	61
76		63	53	62	65	60	60	59	58	46
77		87	78	86	87	84	83	83	84	72
78		84	76	83	84	80	83	79	83	70
25	Make inferences	56	44	53	58	52	51	52	49	41
46		80	71	79	82	78	80	79	77	69
69		71	60	68	72	67	67	66	69	56
80		67	59	66	68	64	64	62	61	53
48	Drawing conclusions	50	42	50	52	48	51	46	46	41
73		78	65	76	80	76	74	73	76	62
79		60	47	58	62	58	56	53	50	43
19	Sequence of events	65	49	62	67	63	60	61	60	48
20		87	81	87	88	86	84	85	87	78
53		76	63	74	78	73	71	72	70	61

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COMMUNITY TYPES

GRADE: TWELVE - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
71	Sequence of events	66	53	63	68	63	64	60	62	48
27	Recognize tone	92	88	92	92	92	90	90	93	86
47		80	68	78	81	79	75	75	75	69
54		70	62	69	72	69	66	67	66	62
22	Applying information	74	59	71	76	72	68	69	71	61
74		71	57	69	73	68	66	65	64	53
70	Cause, effect	91	84	90	91	90	89	87	91	80
72		72	61	70	74	69	70	68	70	56

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COMMUNITY TYPES

GRADE: TWELVE - READING

CLUSTER: STUDY SKILLS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
10	Dictionary skills	65	57	63	65	64	66	67	64	59
11		90	77	88	90	88	86	86	87	79
66	Reference books	82	62	79	85	78	70	74	74	60
67		91	83	90	92	90	86	87	88	83
60	Card catalog	85	80	84	85	83	84	83	85	82
61		65	51	62	68	63	60	57	59	45
62		60	39	56	65	55	47	47	45	34
36	Chart	95	89	95	95	94	94	93	95	89
37		91	85	90	92	90	89	90	89	86
38		94	88	93	93	93	92	93	93	90
39		89	78	88	90	88	85	85	86	78
12	Map	77	65	74	76	74	74	73	71	69
13		90	75	87	90	88	86	88	85	82
14		97	92	96	97	96	96	95	95	94

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STATE REPORT

COMMUNITY TYPES

GRADE: TWELVE - READING

CLUSTER: STUDY SKILLS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
63	Index	88	79	87	90	87	85	85	84	79
64		89	79	88	90	87	85	85	82	76
65		78	68	75	79	75	73	76	74	63
40	Table of contents	98	94	98	98	98	97	97	98	96
41		96	90	96	96	95	93	94	94	92
42		89	80	88	90	88	86	85	86	81

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - READING

CLUSTER: WORD RECOGNITION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
1	Synonyms	79	86	90	92	92	93	93	93	95	96	85	93
2		80	86	88	89	89	91	91	92	93	93	81	86
3		79	83	85	86	86	88	87	89	91	92	80	84
4		71	80	83	84	85	88	87	90	91	92	74	85
5		58	67	72	75	73	76	77	80	81	84	60	70
55	Antonyms	65	78	82	85	85	88	88	89	92	93	72	84
56		60	66	68	69	70	73	72	75	78	80	59	65
57		66	75	77	79	80	83	84	86	89	90	66	82
58		72	78	81	81	82	84	84	86	88	89	72	80
59		34	38	40	42	43	44	46	46	51	54	34	33
6	Analogies	58	72	75	80	80	84	83	86	89	90	65	79
7		75	87	89	91	92	93	93	92	94	94	86	92
8		83	88	89	92	91	93	92	93	94	94	84	92
9		56	69	70	75	75	80	78	79	84	85	63	74

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - READING

CLUSTER: WORD RECOGNITION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
28	Context clues	89	94	94	96	96	96	96	97	97	97	92	95
29		93	95	94	95	95	96	96	96	96	97	93	93
30		85	91	92	94	94	95	95	96	96	97	87	90
31		91	93	94	95	95	96	96	96	97	98	90	93
32		78	83	86	88	87	89	89	90	91	92	79	81
33		78	85	87	89	88	91	90	92	93	94	77	86
34		86	88	88	87	88	88	88	88	89	90	85	89
35		35	42	41	45	46	50	50	54	58	63	36	48

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - READING

CLUSTER: READING COMPREHENSION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
17	Identify main idea	61	69	72	75	74	78	78	80	83	85	60	79
23		61	66	68	71	70	73	71	72	75	77	61	69
43		69	77	78	81	79	82	82	83	85	88	70	76
49		63	67	68	69	69	71	70	70	74	77	62	65
68		64	73	73	76	76	80	79	80	82	85	63	74
75		56	63	63	66	66	68	67	69	71	72	55	65
15	Supporting details	89	92	93	95	94	95	95	95	96	96	91	93
16		86	91	91	93	92	94	94	94	95	95	90	90
18		91	92	91	92	92	93	93	93	93	94	89	92
21		74	80	81	83	83	85	84	86	87	89	75	82
24		58	62	62	62	63	65	62	63	64	66	55	65
26		45	54	55	57	59	62	61	63	67	71	44	54
44		87	89	89	90	90	92	91	92	93	94	84	87
45		79	83	84	85	85	87	87	88	89	92	76	79
50		62	70	72	74	74	76	76	78	81	84	61	75

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
51	Supporting details	60	69	70	73	73	76	75	77	80	82	61	74
52		63	69	71	72	73	75	76	77	80	82	61	69
76		52	57	58	59	60	64	63	64	66	69	46	63
77		78	83	83	83	84	87	87	86	88	90	72	79
78		75	79	79	80	81	83	83	83	85	88	70	75
25	Make inferences	41	48	49	51	51	55	54	56	60	64	41	50
46		69	76	75	77	78	80	80	81	82	85	69	76
69		58	65	64	67	66	69	69	70	73	77	56	66
80		59	62	61	62	63	67	67	67	69	71	53	59
48	Drawing conclusions	40	46	47	49	49	49	50	50	53	53	41	45
73		63	71	71	74	75	77	78	78	80	85	62	71
79		46	51	53	56	56	59	59	60	64	67	43	51
19	Sequence of events	45	57	58	61	61	65	63	66	68	70	48	54
20		80	83	84	86	85	87	87	88	88	90	78	81

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - READING

CLUSTER: READING COMPREHENSION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
53	Sequence of events	60	68	69	71	73	74	74	76	79	83	61	68
71		50	58	58	62	63	66	65	65	69	72	48	59
27	Recognize tone	87	90	89	91	92	92	92	92	93	94	86	89
47		66	73	75	77	77	80	80	81	81	83	69	74
54		61	64	65	67	67	69	70	71	73	75	62	66
22	Applying information	56	66	68	70	69	73	73	75	77	79	61	68
74		54	63	64	66	67	70	70	71	74	78	53	66
70	Cause, effect	83	87	87	89	88	90	90	91	92	94	80	87
72		59	65	66	68	69	71	70	72	75	78	56	62

STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - READING

CLUSTER: STUDY SKILLS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
10	Dictionary skills	55	62	62	63	65	66	64	64	65	67	59	66
11		75	84	84	88	87	89	89	88	91	92	79	87
66	Reference books	59	69	73	77	78	79	81	83	86	89	60	74
67		82	86	86	89	89	90	90	91	92	93	83	88
60	Card catalog	80	82	82	84	83	84	84	85	85	85	82	80
61		46	57	56	59	61	63	64	68	70	71	45	63
62		35	44	49	51	54	58	57	62	66	71	34	50
36	Chart	88	93	93	94	94	96	95	95	96	96	89	90
37		84	88	88	90	89	91	91	91	92	93	86	87
38		88	91	91	93	93	94	93	93	94	94	90	90
39		75	83	85	88	87	89	89	89	91	92	78	83
12	Map	63	70	71	73	74	76	75	75	78	78	69	76
13		72	83	83	88	87	89	88	89	91	92	82	87
14		91	95	95	96	96	96	96	96	97	97	94	95

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - READING

CLUSTER: STUDY SKILLS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
63	Index	78	84	84	87	87	88	88	89	90	91	79	82
64		77	84	84	86	87	88	88	89	91	92	76	81
65		66	73	72	76	76	76	76	77	79	81	63	74
40	Table of contents	94	97	96	97	98	98	98	98	98	98	96	97
41		89	93	94	95	95	96	96	96	97	97	92	93
42		78	84	84	87	88	90	88	90	91	92	81	84

STATE REPORT

GRADE: FOUR - MATHEMATICS

CLUSTER: ADDITION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
37	One-digit numbers	93	Good	Addition of single and multiple digits in a horizontal and vertical item format is good. Performance levels are somewhat lower but still satisfactory in addition items requiring regrouping.
2	Multiple digits without regrouping in vertical format	90	Good	
3		90	Good	
9	Multiple digits without regrouping in horizontal format	88	Good	
39	Multiple digits with regrouping	81	Satisfactory	
41		74	Satisfactory	
43		84	Satisfactory	

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STATE REPORT

GRADE: FOUR - MATHEMATICS

CLUSTER: SUBTRACTION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
1	One-digit numbers	95	Outstanding	Performance ranged from good to outstanding for items not requiring regrouping; there was poor performance in general for items requiring regrouping.
38	Multiple digits without regrouping in vertical format	89	Good	
19	Multiple digits with regrouping	57	Poor	
25		68	Poor	
53		61	Poor	
58	Multiple digits with regrouping having one zero in the minuend	58	Poor	

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STATE REPORT

GRADE: FOUR - MATHEMATICS

CLUSTER: MULTIPLICATION/DIVISION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
6	Multiplication of one-digit numbers	89	Good	Overall performance in multiplication is viewed as poor to satisfactory. Students performed well on multiplication of two one-digit numbers less than or equal to six. More emphasis is needed on multiplication of two-digit numbers by one-digit numbers without carrying; multiplication involving zero; and division with divisors and quotients less than six.
50	Multiplication of two-digit numbers by one-digit numbers	73	Satisfactory	
52		65	Poor	
23	Multiplication involving zero	68	Poor	
57	Division with divisors and quotients less than or equal to six	63	Poor	
16		72	Satisfactory	

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STATE REPORT

GRADE: FOUR - MATHEMATICS

CLUSTER: NUMBER AND OPERATION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
4	Cardinality	96	Outstanding	Scores for the majority of items were either outstanding, good or satisfactory. Weaknesses are indicated in the areas of the associative principle, the multiplicative identity, and recognition of number patterns.
7	Ordinality	90	Good	
59		84	Satisfactory	
61	Number line	83	Satisfactory	
55	Properties odd, even	72	Satisfactory	
10	Commutative principle	74	Satisfactory	
27	Associative principle	38	Unsatisfactory	
63	Relation of operation	13	Unsatisfactory	
8	Identity: zero and one	89	Good	
56		68	Poor	
30	Simple estimation	70	Satisfactory	
12	Number patterns	67	Poor	

STATE REPORT

GRADE: FOUR - MATHEMATICS

CLUSTER: NUMERATION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
20	Numeration system	70	Satisfactory	Performance in this cluster was mixed. The overall cluster performance was deemed good; however, two items dealing with place value, grouping and regrouping, and expanded notation evidenced unsatisfactory student performance. The students' unsatisfactory performance with respect to item 48 (place value: grouping/regrouping in pictorial form) may have been due to the formating of the item.
48	Place value: grouping, regrouping	36	Unsatisfactory	
40	Place value: three-digit numeral	88	Good	
49		89	Good	
18	Place value expanded	88	Good	
68		38	Unsatisfactory	

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STATE REPORT

GRADE: FOUR - MATHEMATICS

CLUSTER: GEOMETRY

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
17	Geometric figures: triangle, rectangle	86	Good	In areas relating to recognition of geometric figures, statewide performance was good, while in areas relating to angle recognition and distance, performance was only satisfactory. Visual problems may have reduced the percentage of students correctly answering items measuring recognition of angles; however, based on the performance, more emphasis is indicated in that area.
46	Geometric figures: circle	92	Good	
14	Angles	79	Satisfactory	
26		74	Satisfactory	
44	Geometric relation	92	Good	
62		82	Satisfactory	

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STATE REPORT

GRADE: FOUR - MATHEMATICS

CLUSTER: MEASUREMENT

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
42	Linear measure	91	Good	Items dealing with time, money, and comparing relative size were all rated either satisfactory or good. The item on linear measure had the highest rating in the cluster. The only difficulty was experienced on items dealing with the metric system. This could be the result of a lack of emphasis by the classroom teacher.
33	Identify metric units	32	Unsatisfactory	
65		51	Poor	
28	Time measure	80	Satisfactory	
22	Telling time	84	Satisfactory	
60		81	Satisfactory	
13	Money facts	87	Good	
51	Making change	84	Satisfactory	
64	Comparison of relative sizes	74	Satisfactory	

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GRADE: FOUR - MATHEMATICS

CLUSTER: WORD PROBLEMS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
15	Simple word problems	91	Good	Overall performance in this cluster ranged from satisfactory to poor. Poor performance was evidenced in the item dealing with translation of words to mathematical sentences which could be due to insufficient familiarity with "greater than" and "less than" signs or possible perceptual difficulties in orientation. Poor performance on items dealing with simple word problems with reading level adapted to appropriate level could be attributed to unfamiliarity with metric terms and possible reading comprehension problems. Other items in this area were deemed satisfactory.
31		82	Satisfactory	
32		78	Satisfactory	
34		59	Poor	
69		70	Satisfactory	
70		52	Poor	
72		56	Poor	
66	Translation of words to symbols	60	Poor	

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GRADE: FOUR - MATHEMATICS

CLUSTER: EQUATIONS/INEQUALITIES

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
5	Solving equations	92	Good	Performance was good to satisfactory for items dealing with simple addition, subtraction and multiplication equations. Student weaknesses were evidenced in division, greater than, less than, and equal to equations. These basic concepts should be reinforced at this grade level. Unsatisfactory results might be due to perception (symbols) and lack of reinforcement of division skills.
54		88	Good	
45		79	Satisfactory	
21		67	Poor	
11	Simple inequalities	69	Poor	
71		25	Unsatisfactory	

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GRADE: FOUR - MATHEMATICS

CLUSTER: SETS/FRACTIONAL NUMBERS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
29	Fraction models	58	Poor	There is generally poor performance on items relating to sets and fractions. Performance on one item relating to understanding the relative size of a fraction with the same denominator was deemed satisfactory, while one item dealing with empty sets demonstrated good performance.
36		46	Poor	
35	Fraction relative size	72	Satisfactory	
67		66	Poor	
24	Sets	63	Poor	
47		89	Good	

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COMMUNITY TYPES

GRADE: FOUR - MATHEMATICS

CLUSTER: ADDITION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
37	One-digit numbers	95	89	94	95	94	93	93	92	
2	Multiple digits without regrouping in vertical format	93	84	92	93	92	91	90	92	
3		93	84	92	93	92	92	89	90	
9	Multiple digits without regrouping in horizontal format	93	78	91	93	91	90	86	90	
39	Multiple digits with regrouping	85	71	84	87	84	82	78	81	
41		79	66	77	80	77	76	74	75	
43		88	75	87	89	86	85	81	83	

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COMMUNITY TYPES

GRADE: FOUR - MATHEMATICS

CLUSTER: SUBTRACTION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
1	One-digit numbers	97	92	96	97	96	95	96	95	
38	Multiple digits without regrouping in vertical format	92	84	91	92	91	91	89	89	
19	Multiple digits with regrouping	67	45	60	66	59	56	52	53	
25		76	56	72	76	71	69	68	66	
53		70	48	64	71	64	60	55	59	
58	Multiple digits with regrouping having one zero in the minuend	68	46	61	67	60	57	54	56	

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COMMUNITY TYPES

GRADE: FOUR - MATHEMATICS

CLUSTER: MULTIPLICATION/DIVISION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
6	Multiplication of one-digit numbers	93	83	91	94	92	88	87	87	
50	Multiplication of two-digit numbers by one-digit numbers	80	59	77	83	78	73	75	71	
52		71	53	69	74	69	64	65	58	
23	Multiplication involving zero	76	53	72	77	71	68	68	62	
57	Division with divisors and quotients less than or equal to six	71	48	67	74	67	59	58	56	
16		76	59	75	82	75	69	67	67	

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COMMUNITY TYPES

GRADE: FOUR - MATHEMATICS

CLUSTER: NUMBER AND OPERATION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
4	Cardinality	97	93	97	97	97	96	95	96	
7	Ordinality	95	79	93	95	93	92	90	89	
59		89	74	87	89	87	85	83	83	
61	Number line	90	67	88	92	89	87	83	83	
55	Properties odd,even	81	51	77	84	79	74	72	71	
10	Commutative principle	81	58	78	84	79	76	75	71	
27	Associative principle	41	26	40	47	42	37	35	32	
63	Relation of operation	13	13	13	13	12	13	15	13	
8	Identity: zero and one	93	80	92	94	93	92	88	91	
56		73	55	71	78	74	68	64	64	
30	Simple estimation	76	55	74	79	74	71	67	68	
12	Number patterns	73	53	70	76	72	69	67	66	

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COMMUNITY TYPES

GRADE: FOUR - MATHEMATICS

CLUSTER: NUMERATION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
20	Numeration system	80	51	74	82	78	73	68	72	
48	Place value: grouping/regrouping	41	29	38	43	38	38	35	33	
40	Place value: three-digit numeral	91	78	91	93	91	89	87	88	
49		93	78	93	95	93	91	88	88	
18	Place value expanded	93	77	91	94	92	89	88	87	
68		39	25	40	48	41	38	38	37	

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COMMUNITY TYPES

GRADE: FOUR - MATHEMATICS

CLUSTER: GEOMETRY

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
17	Geometric figures: triangle, rectangle	90	74	89	91	90	88	86	85	
46	Geometric figures: circle	95	85	94	96	95	93	91	92	
14	Angles	85	64	83	86	84	83	80	82	
26		77	68	76	77	76	74	74	75	
44	Geometric relation	95	84	94	96	94	93	91	92	
62		88	67	86	89	87	85	82	82	

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COMMUNITY TYPES

GRADE: FOUR - MATHEMATICS

CLUSTER: MEASUREMENT

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
42	Linear measure	94	83	94	95	94	93	90	93	
33	Identify metric units	41	26	33	36	32	30	31	26	
65		62	38	53	61	56	51	49	47	
28	Time measure	86	66	84	88	85	81	80	80	
22	Telling time	89	71	87	90	88	86	84	85	
60		88	62	86	91	87	84	80	80	
13	Money facts	90	82	88	90	89	87	86	87	
51	Making change	90	71	88	91	88	86	83	83	
64	Comparison of relative sizes	79	58	78	82	79	76	72	73	

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COMMUNITY TYPES

GRADE: FOUR - MATHEMATICS

CLUSTER: WORD PROBLEMS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
15	Simple word problems	94	83	94	95	94	92	90	91	
31		87	70	86	89	86	83	82	82	
32		87	60	83	88	84	80	78	76	
34		65	49	61	65	62	61	60	58	
69		79	50	76	81	76	72	69	67	
70		61	34	55	63	57	54	52	49	
72		64	39	60	67	61	58	57	54	
66	Translation of words to symbols	65	48	63	67	64	62	60	59	

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COMMUNITY TYPES

GRADE: FOUR - MATHEMATICS

CLUSTER: EQUATIONS/INEQUALITIES

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
5	Solving equations	95	85	94	95	95	93	92	93	
54		92	80	91	93	91	88	86	88	
45		85	67	83	86	83	80	77	76	
21		76	51	71	79	71	63	62	64	
11	Simple inequalities	71	50	74	81	77	73	69	71	
71		23	21	26	28	27	25	26	25	

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STATE REPORT

COMMUNITY TYPES

GRADE: FOUR - MATHEMATICS

CLUSTER: SETS/FRACTIONAL NUMBERS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
29	Fraction models	63	43	61	67	63	58	56	54	
36		50	35	48	54	50	43	44	39	
35	Fraction relative size	77	66	75	74	75	72	70	73	
67		72	53	69	75	72	68	64	66	
24	Sets	67	51	66	70	68	65	61	61	
47		94	80	92	94	92	90	88	89	

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: FOUR - MATHEMATICS

CLUSTER: ADDITION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
37	One-digit numbers	89	92	92	94	94	94	94	94	95	95		93
2	Multiple digits without regrouping in vertical format	83	90	90	92	92	93	93	92	93	94		92
3		84	90	90	92	92	93	93	93	93	93		93
9	Multiple digits without regrouping in horizontal format	77	87	88	91	91	92	92	91	93	93		90
39	Multiple digits with regrouping	71	79	79	83	84	85	84	85	87	87		81
41		65	73	73	77	78	78	78	78	79	80		76
43		74	82	83	86	87	88	87	87	89	89		85

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: FOUR - MATHEMATICS

CLUSTER: SUBTRACTION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
1	One-digit numbers	92	94	95	96	96	97	97	97	97	97		95
38	Multiple digits without regrouping in vertical format	83	89	89	91	90	92	91	91	92	92		90
19	Multiple digits with regrouping	43	55	54	58	60	65	62	62	67	67		55
25		54	66	68	72	73	75	73	73	76	77		68
53		46	57	58	63	65	69	67	66	70	72		59
58	Multiple digits with regrouping having one zero in the minuend	44	54	56	61	62	65	63	63	67	68		52

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: FOUR - MATHEMATICS

CLUSTER: MULTIPLICATION/DIVISION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
6	Multiplication of one-digit numbers	82	86	88	92	91	93	92	93	94	94		89
50	Multiplication of two-digit numbers by one-digit numbers	57	68	70	77	77	79	78	81	83	85		77
52		52	61	61	69	68	70	69	72	74	77		64
23	Multiplication involving zero	52	63	65	70	70	73	73	76	78	80		69
57	Division with divisors and quotients less than or equal to six	45	55	60	65	66	68	70	71	75	77		61
16		57	65	69	75	74	76	77	79	81	85		71

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: FOUR - MATHEMATICS

CLUSTER: NUMBER AND OPERATION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
4	Cardinality	93	96	96	97	97	97	97	97	97	97		96
7	Ordinality	78	89	89	93	93	94	94	94	95	95		92
59		72	83	83	87	86	87	88	89	89	91		85
61	Number line	65	80	82	88	88	89	90	90	91	93		87
55	Properties odd, even	48	65	68	77	77	79	80	83	84	87		75
10	Commutative principle	56	69	73	77	79	80	80	81	82	86		77
27	Associative principle	24	34	34	37	41	39	45	44	44	52		37
63	Relation of operation	13	14	12	12	13	13	13	13	13	13		14
8	Identity: zero and one	78	88	89	92	93	94	93	93	94	95		92
56		54	63	64	71	71	73	74	76	78	81		68
30	Simple estimation	54	65	68	72	74	76	76	76	79	80		73
12	Number patterns	51	62	64	70	70	73	74	73	78	79		70

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: FOUR - MATHEMATICS

CLUSTER: NUMERATION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
20	Numeration system	49	66	67	74	76	77	79	79	82	85		74
48	Place value: grouping, regrouping	28	34	34	38	37	41	39	39	41	45		40
40	Place value: three-digit numeral	77	86	88	90	90	91	92	92	93	94		89
49		77	88	89	92	93	93	93	94	95	95		91
18	Place value expanded	76	86	87	90	91	92	92	93	94	95		90
68		23	33	35	37	38	40	44	44	46	55		38

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DISTRICT FACTOR GROUPINGS

GRADE: FOUR - MATHEMATICS

CLUSTER: GEOMETRY

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
17	Geometric figures: triangle, rectangle	73	83	85	89	89	90	90	91	92	92		88
46	Geometric figures: circle	84	91	92	95	94	95	95	95	96	96		93
14	Angles	61	78	79	83	83	85	85	85	87	87		84
26		67	73	74	78	76	76	77	76	78	77		73
44	Geometric relation	83	91	92	94	94	95	95	95	95	96		93
62		65	79	81	86	86	87	88	88	89	90		85

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DISTRICT FACTOR GROUPINGS

GRADE: FOUR - MATHEMATICS

CLUSTER: MEASUREMENT

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
42	Linear measure	82	90	91	93	94	94	94	94	95	95		92
33	Identify metric units	26	30	28	34	32	30	34	33	37	38		32
65		36	45	45	55	52	56	58	58	63	65		53
28	Time measure	64	78	79	83	84	85	86	86	89	89		83
22	Telling time	70	82	83	86	87	89	89	89	91	92		87
60		59	77	80	85	86	88	89	89	91	92		85
13	Money facts	82	86	86	88	89	90	89	89	90	90		89
51	Making change	70	81	84	87	87	89	89	90	91	92		87
64	Comparison of relative sizes	57	69	71	77	78	79	81	81	82	83		76

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: FOUR - MATHEMATICS

CLUSTER: WORD PROBLEMS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
15	Simple word problems	82	90	91	93	93	94	94	94	95	96		93
31		69	79	81	85	85	87	87	87	90	90		84
32		58	72	76	82	82	85	85	86	89	91		81
34		48	57	58	60	61	62	62	63	65	66		64
69		49	63	68	73	75	77	78	79	82	84		74
70		32	46	48	55	53	58	59	60	64	67		54
72		37	50	54	59	59	62	63	64	68	71		59
66	Translation of words to symbols	46	57	59	64	63	64	66	65	67	70		61

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: FOUR - MATHEMATICS

CLUSTER: EQUATIONS/INEQUALITIES

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
5	Solving equations	84	91	92	94	95	96	95	95	95	96		94
54		79	87	88	91	91	91	92	92	93	94		89
45		66	76	78	82	82	83	84	85	86	88		80
21		48	59	64	70	71	72	75	75	78	81		66
11	Simple inequalities	48	66	67	71	73	75	79	78	80	84		75
71		20	23	25	27	22	27	25	28	26	32		28

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: FOUR - MATHEMATICS

CLUSTER: SETS/FRACTIONAL NUMBERS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
29	Models for fractions	41	52	53	62	60	62	64	64	66	74		57
36		33	41	40	49	48	49	52	52	52	58		40
35	Fraction relative size	66	71	73	76	76	75	75	73	77	71		71
67		51	62	63	70	67	72	71	74	75	78		68
24	Sets	49	61	63	68	66	69	68	68	71	70		66
47		79	88	89	91	92	93	93	93	94	95		90

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STATE REPORT

GRADE: SEVEN - MATHEMATICS

CLUSTER: WHOLE NUMBERS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
55	Addition with regrouping	86	Good	The overall performance was good for addition of whole numbers. However, the performance level was minimally satisfactory for subtraction on items which required regrouping. The performance was minimally satisfactory for all items requiring the use of the multiplication and division algorithms. Particular difficulty was reflected on items which required a zero as a "place holder" in the quotient or a remainder.
28	Column addition of three-digit numbers	89	Good	
1	Uneven column addition	89	Good	
39	Subtraction with regrouping containing zero in the minuend	75	Satisfactory	
8	Subtraction with regrouping	81	Satisfactory	
57	Subtraction with no regrouping	86	Good	
33	Mixed addition and subtraction	74	Satisfactory	
65	Multiplication with zero	71	Satisfactory	
4	Multiplication of three-digit numbers	72	Satisfactory	
32	Division with no remainder	77	Satisfactory	
25	Division: one and two-digit divisors with remainder	66	Poor	
61	Division: two-digit divisors with remainder	70	Satisfactory	

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GRADE: SEVEN - MATHEMATICS

CLUSTER: FRACTIONS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
36	Models for fractions	75	Satisfactory	Overall performance on fractional numbers was poor. Students performed satisfactorily on use of models to represent fractions, addition and subtraction of like-fractions and multiplication of whole numbers by proper fractions. Teachers should note a need for additional emphasis on subtraction of unlike fractions with regrouping and division of a whole number or proper fraction by a proper fraction.
19	Relative size	56	Poor	
31	Addition of like fractions	83	Satisfactory	
68	Equivalent fractions	59	Poor	
49	Least common denominator	54	Poor	
74	Addition of unlike fractions	43	Poor	
11	Addition of mixed numbers with no regrouping	83	Satisfactory	
22	Addition of mixed numbers with regrouping	51	Poor	
6	Subtraction of like fractions with no regrouping	86	Good	
26	Subtraction of like fractions with regrouping	39	Unsatisfactory	
46	Subtraction of unlike fractions without regrouping	49	Poor	
41	Multiplication of whole numbers by proper fractions	76	Satisfactory	

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GRADE: SEVEN - MATHEMATICS

CLUSTER: FRACTIONS (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
66	Multiplication of proper fraction by proper fraction	65	Poor	
78	Division of whole number by proper fraction	28	Unsatisfactory	
52	Division of proper fraction by proper fraction	31	Unsatisfactory	
76	Equivalence	54	Poor	
69	Conversion to mixed number	65	Poor	

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GRADE: SEVEN - MATHEMATICS

CLUSTER: DECIMALS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
27	Place value	54	Poor	Most of the scores in this cluster are in the poor and unsatisfactory range. Strengths were noted in division of a decimal by a whole number and in the areas of vertical addition and subtraction.
50	Expanded notation	38	Unsatisfactory	
37	Addition in vertical format	86	Good	
70	Addition in horizontal format	46	Poor	
20	Subtraction in vertical format	78	Satisfactory	
53	Subtraction in horizontal format	30	Unsatisfactory	
45	Multiplication of whole numbers by decimals	64	Poor	
23	Multiplication cf decimals	47	Poor	
58	Division of decimals by whole numbers	73	Satisfactory	

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GRADE: SEVEN - MATHEMATICS

CLUSTER: MEASUREMENT AND DENOMINATE NUMBERS

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
29	Units of measure	89	Good	Students demonstrated strengths in the areas of units of measure, money computation, conversion and perimeter of triangles and rectangles. Reinforcement is needed on items dealing with temperature, area measurement, addition and subtraction of denominates, and metric knowledge. These concepts are sometimes overlooked in curriculum; also, problems might be due to terminology.
56	Money computation	89	Good	
10	Conversion within same system	83	Satisfactory	
48	Temperature	56	Poor	
15	Perimeter of rectangle	72	Satisfactory	
54	Area measurement	21	Unsatisfactory	
73	Addition and subtraction of denominate numbers with no regrouping	65	Poor	
72	Metric knowledge	69	Poor	

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GRADE: SEVEN - MATHEMATICS

CLUSTER: NUMBER AND OPERATION

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
43	Solving equations	77	Satisfactory	The majority of the number and operation skills were rated as either satisfactory or good. Only six of the twenty-two items were characterized as poor in terms of the percentage of students correctly answering the items. More emphasis is indicated in areas relating to inequality relations, rounding, place value in expanded notation, decimal numeration, averaging of numbers, and concept of greatest common factor. Two items concerning whole number numeration and the associative principle were rated as good.
60	Inequality symbols	74	Satisfactory	
42	Inequalities	64	Poor	
14	Rounding	60	Poor	
47	Place value	76	Satisfactory	
67		70	Satisfactory	
35	Place value up to five digits	81	Satisfactory	
17	Place value in expanded notation	53	Poor	
62	Whole numbers numeration	88	Good	
75	Decimals numeration	47	Poor	
13	Number line	73	Satisfactory	
59	Properties: odd/even	70	Satisfactory	
3	Properties factor	73	Satisfactory	
24	Average	52	Poor	
7	Commutative principles	83	Satisfactory	

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STATE REPORT

GRADE: SEVEN - MATHEMATICS

CLUSTER: NUMBER AND OPERATION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
12	Associative principles	85	Good	
63	Identity concept: zero	78	Satisfactory	
40	Identity concept: one	78	Satisfactory	
38	Rounding	81	Satisfactory	
71	Greatest common factor	49	Poor	
21	Number patterns	76	Satisfactory	
81	Ordinality	77	Satisfactory	

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STATE REPORT

GRADE: SEVEN - MATHEMATICS

CLUSTER: WORD PROBLEMS AND GRAPHS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
30	Simple word problems	91	Good	Word problems which could not readily be reduced to single units prior to an arithmetic operation were answered at a poor level. When the item could be reduced to a single unit, performance was satisfactory to good. Performance on items requiring inverse arithmetic operations was satisfactory to good. Graph interpretation ranged from good to poor with poor performance noted when an arithmetic operation was required in addition to comparing the lengths of the lines on a bar graph.
34		84	Satisfactory	
44		54	Poor	
18	Ratio and proportion	50	Poor	
2	Inverse operation: addition to subtraction	92	Good	
9	Inverse operation: multiplication to division	79	Satisfactory	
79	Reading graphs and charts	87	Good	
80	Interpreting graphs and charts	73	Satisfactory	
82		49	Poor	

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STATE REPORT

GRADE: SEVEN - MATHEMATICS

CLUSTER: GEOMETRY AND PERCENT

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
5	Identify polygons	93	Good	Overall performance in this cluster was poor. Students demonstrated unsatisfactory performance in the area of geometric relations which may be due to lack of exposure. Poor performance was evidenced on items dealing with geometric terms (circles) and the computation of a percent of a number. Student's understanding of the concept of percents was satisfactory while their identification of polygons was rated good.
77	Geometric relations	26	Unsatisfactory	
51	Circles	42	Poor	
16	Percent of a number	52	Poor	
64	Concept of percent	73	Satisfactory	

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COMMUNITY TYPES

GRADE: SEVEN - MATHEMATICS

CLUSTER: WHOLE NUMBERS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
55	Addition with regrouping	87	82	87	89	87	87	84	85	84
28	Column addition of three-digit numbers	90	86	89	91	89	89	86	89	87
1	Uneven column addition	90	87	90	91	90	90	88	88	88
39	Subtraction with regrouping containing zero in the minuend	77	65	77	82	78	76	72	74	68
8	Subtraction with regrouping	83	74	82	86	83	82	77	81	78
57	Subtraction with no regrouping	88	80	88	91	88	87	84	86	83
33	Mixed addition and subtraction	77	62	77	81	78	77	73	76	76
65	Multiplication with zero	74	59	74	79	73	72	65	69	65
4	Multiplication of three-digit numbers	75	65	74	77	73	73	67	72	64
32	Division with no remainder	81	66	80	84	79	78	72	76	68
25	Division: one and two-digit divisors with remainder	70	53	70	73	68	66	61	61	58
61	Division: two-digit divisors with remainder	74	59	73	77	73	72	65	67	62

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COMMUNITY TYPES

GRADE: SEVEN - MATHEMATICS

CLUSTER: FRACTIONS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
36	Models for fractions	82	57	78	86	79	76	74	71	70
19	Relative size	64	36	58	69	62	59	53	52	51
31	Addition of like fractions	87	72	84	89	86	85	80	79	80
68	Equivalent fractions	66	43	63	71	62	61	55	53	49
49	Least common denominator	56	44	54	64	55	54	49	46	43
74	Addition of unlike fractions	46	28	43	57	45	43	35	29	21
11	Addition of mixed numbers with no regrouping	86	74	86	89	86	84	81	81	75
22	Addition of mixed numbers with regrouping	58	32	54	65	56	54	46	43	37
6	Subtraction of like fractions with no regrouping	89	78	88	91	89	87	84	83	82
26	Subtraction of like fractions with regrouping	42	26	41	51	40	42	34	30	29
46	Subtraction of unlike fractions without regrouping	52	33	49	63	51	50	39	35	29
41	Multiplication of whole numbers by proper fractions	76	71	77	80	76	74	70	75	79
66	Multiplication of proper fraction by proper fraction	64	62	66	69	63	64	60	62	60
78	Division of whole number by proper fraction	25	24	30	34	27	29	24	21	19
52	Division of proper fraction by proper fraction	28	21	32	41	31	32	26	20	16

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STATE REPORT

COMMUNITY TYPES

GRADE: SEVEN - MATHEMATICS

CLUSTER: FRACTIONS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
76	Equivalence	56	46	55	59	55	53	49	53	52
69	Conversion to mixed number	71	49	69	76	68	67	60	56	59

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COMMUNITY TYPES

GRADE: SEVEN - MATHEMATICS

CLUSTER: DECIMALS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
27	Place value	55	46	55	58	57	55	57	52	56
50	Expanded notation	42	26	39	49	40	39	36	39	25
37	Addition in vertical format	87	80	87	90	87	85	84	85	86
70	Addition in horizontal format	49	33	46	56	49	48	42	41	35
20	Subtraction in vertical format	79	71	79	83	79	80	75	78	75
53	Subtraction in horizontal format	31	20	31	39	32	30	25	28	20
45	Multiplication of whole numbers by decimals	68	51	68	73	67	66	58	64	52
23	Multiplication of decimals	48	40	48	54	48	49	40	45	34
58	Division of decimals by whole numbers	76	60	76	81	75	74	68	72	63

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COMMUNITY TYPES

GRADE: SEVEN - MATHEMATICS

CLUSTER: MEASUREMENT AND DENOMINATE NUMBERS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
29	Units of measure	94	76	93	95	93	91	87	89	89
56	Money computation	91	82	91	93	91	90	89	89	90
10	Conversion within same system	86	74	86	89	86	84	80	81	82
48	Temperature	66	30	60	70	65	65	58	55	49
15	Perimeter of rectangle	75	65	73	75	75	73	70	67	71
54	Area measurement	22	14	21	28	22	19	18	20	13
73	Addition and subtraction of denominate numbers with no regrouping	68	53	68	74	68	63	63	60	63
72	Metric knowledge	74	51	73	81	76	70	67	67	62

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COMMUNITY TYPES

GRADE: SEVEN - MATHEMATICS

CLUSTER: NUMBER AND OPERATION

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
43	Solving equations	80	66	79	83	80	79	75	76	75
60	Inequality symbols	79	56	77	84	79	76	72	73	74
42	Inequalities	71	42	68	76	71	67	65	63	70
14	Rounding	64	42	63	70	66	63	59	58	54
47	Place value	80	63	78	83	79	78	73	75	75
67		73	60	72	78	74	70	68	69	67
35	Place value up to five digits	86	65	84	89	85	82	79	80	81
17	Place value in expanded notation	56	40	55	60	57	53	51	50	54
62	Whole numbers numeration	90	79	90	93	90	89	87	88	85
75	Decimals numeration	52	33	50	58	50	49	38	47	32
13	Number line	79	54	76	83	78	76	71	70	71
59	Properties odd/even	77	50	75	82	76	72	67	69	69
3	Properties factor	79	57	75	84	77	74	66	69	68
24	Average	57	32	56	66	57	51	43	50	30
7	Commutative principles	89	66	87	91	89	86	84	84	86

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COMMUNITY TYPES

GRADE: SEVEN - MATHEMATICS

CLUSTER: NUMBER AND OPERATION (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
12	Associative principles	90	69	89	92	90	87	84	87	88
63	Identity concept: zero	82	64	80	86	82	78	77	76	79
40	Identity concept: one	81	64	80	85	81	79	75	74	73
38	Rounding	85	70	83	87	84	81	78	80	76
71	Greatest common factor	52	41	51	54	51	49	49	49	51
21	Number patterns	81	63	78	83	80	77	72	74	76
81	Ordinality	83	58	80	86	82	80	77	76	78

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COMMUNITY TYPES

GRADE: SEVEN - MATHEMATICS

CLUSTER: WORD PROBLEMS AND GRAPHS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
30	Simple word problems	92	85	92	94	92	91	89	89	89
34		88	70	86	90	87	86	83	85	82
44		58	42	56	60	57	56	56	55	52
18	Ratio and proportion	54	40	51	57	53	52	53	47	49
2	Inverse operation: addition to subtraction	94	86	94	96	94	94	93	92	94
9	Inverse operation: multiplication to division	84	65	82	87	83	81	75	79	79
79	Reading graphs and charts	91	72	90	93	91	89	86	87	88
80	Interpreting graphs and charts	78	56	76	82	78	76	75	75	73
82		53	37	50	56	54	49	46	48	45

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COMMUNITY TYPES

GRADE: SEVEN - MATHEMATICS

CLUSTER: GEOMETRY AND PERCENT

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
5	Identify polygons	95	86	94	96	95	93	92	93	92
77	Geometric relations	25	24	27	29	25	24	24	24	22
51	Circles	48	28	44	50	46	43	42	43	38
16	Percent of a number	56	38	53	61	55	52	48	49	43
64	Concept of percent	76	59	76	81	77	75	70	72	70

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STATE REPORT
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GRADE: SEVEN - MATHEMATICS

CLUSTER: WHOLE NUMBERS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
55	Addition with regrouping	82	85	85	86	86	86	87	88	89	89	84	88
28	Column addition of three-digit numbers	86	88	88	88	89	89	89	91	90	91	87	89
1	Uneven column addition	87	89	89	90	90	90	90	91	91	91	88	90
39	Subtraction with regrouping containing zero in the minuend	64	71	74	75	76	78	78	80	81	83	68	78
8	Subtraction with regrouping	74	79	80	81	83	83	83	84	86	86	78	82
57	Subtraction with no regrouping	80	84	85	86	88	87	88	89	90	91	83	89
33	Mixed addition and subtraction	62	71	74	75	77	77	78	79	80	83	76	79
65	Multiplication with zero	59	67	69	72	73	74	74	76	77	80	65	74
4	Multiplication of three-digit numbers	65	70	71	72	75	75	75	76	76	77	64	75
32	Division with no remainder	65	73	76	77	80	80	81	82	83	86	68	80
25	Division: one and two-digit divisors with remainder	53	60	64	67	69	70	70	72	71	75	58	70
61	Division: two-digit divisors with remainder	58	66	69	71	72	73	73	75	77	78	62	75

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STATE REPORT
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GRADE: SEVEN - MATHEMATICS

CLUSTER: FRACTIONS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
36	Models for fractions	54	68	72	78	79	79	82	83	85	88	70	78
19	Relative size	34	47	51	57	58	60	63	66	70	74	51	61
31	Addition of like fractions	71	79	81	84	84	84	87	88	88	91	80	84
68	Equivalent fractions	42	53	58	59	62	62	65	66	70	74	49	65
49	Least common denominator	43	48	52	52	57	55	58	60	62	63	43	56
74	Addition of unlike fractions	27	34	39	41	46	43	47	51	52	59	21	44
11	Addition of mixed numbers with no regrouping	73	80	82	85	84	85	87	89	88	91	75	84
22	Addition of mixed numbers with regrouping	29	42	49	52	53	54	57	61	63	69	37	55
6	Subtraction of like fractions with no regrouping	78	84	85	88	88	88	89	91	91	93	82	89
26	Subtraction of like fractions with regrouping	25	32	38	40	40	42	43	46	47	54	29	43
46	Subtraction of unlike fractions without regrouping	32	39	46	48	52	48	54	58	58	66	29	51

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STATE REPORT
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GRADE: SEVEN - MATHEMATICS

CLUSTER: FRACTIONS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
41	Multiplication of whole numbers by proper fractions	71	72	74	75	75	78	78	78	79	81	79	76
66	Multiplication of proper fraction by proper fraction	62	63	63	65	66	67	65	66	67	69	60	65
78	Division of whole number by proper fraction	23	26	27	27	29	31	29	31	32	34	19	31
52	Division of proper fraction by proper fraction	19	25	28	29	32	33	33	36	37	43	16	36
76	Equivalence	46	51	51	51	54	54	56	58	60	62	52	53
69	Conversion to mixed number	48	58	64	67	68	69	70	72	74	78	59	70

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GRADE: SEVEN - MATHEMATICS

CLUSTER: DECIMALS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
27	Place value	45	53	54	54	53	56	55	57	57	59	56	56
50	Expanded notation	26	32	32	37	41	38	44	43	49	54	25	42
37	Addition in vertical format	79	85	84	85	87	86	88	89	90	90	86	84
70	Addition in horizontal format	32	39	42	44	47	48	51	53	55	58	35	47
20	Subtraction in vertical format	71	76	77	78	79	79	80	81	82	84	75	81
53	Subtraction in horizontal format	18	25	27	28	33	33	33	36	38	40	20	29
45	Multiplication of whole numbers by decimals	50	60	63	65	68	68	68	70	71	76	52	67
23	Multiplication of decimals	39	40	44	47	49	50	49	52	51	55	34	45
58	Division of decimals by whole numbers	60	69	70	73	76	75	77	79	80	83	63	76

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STATE REPORT
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GRADE: SEVEN - MATHEMATICS

CLUSTER: MEASUREMENT AND DENOMINATE NUMBERS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
29	Units of measure	74	86	89	91	93	93	94	95	96	96	89	91
56	Money computation	81	87	89	90	90	91	91	92	93	94	90	91
10	Conversion within same system	73	81	83	84	85	85	86	87	89	90	82	87
48	Temperature	28	48	52	62	60	63	65	67	69	74	49	70
15	Perimeter of rectangle	64	69	69	73	74	74	75	76	76	76	71	71
54	Area measurement	13	17	17	20	20	21	24	24	28	32	13	19
73	Addition and subtraction of denominate numbers with no regrouping	52	59	62	65	67	67	69	71	75	77	63	68
72	Metric knowledge	49	60	64	70	73	74	78	80	81	84	62	73

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GRADE: SEVEN - MATHEMATICS

CLUSTER: NUMBER AND OPERATION

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
43	Solving equations	65	73	75	77	78	79	81	82	83	85	75	81
60	Inequality symbols	54	67	72	75	77	78	81	82	84	86	74	79
42	Inequalities	39	57	63	65	66	71	74	73	76	81	70	71
14	Rounding	40	55	58	60	64	64	67	67	70	73	54	64
47	Place value	62	73	74	77	78	79	80	81	82	83	75	80
67		59	67	68	70	72	73	74	76	78	80	67	75
35	Place value up to five digits	64	76	80	83	84	85	86	87	89	91	81	83
17	Place value in expanded notation	39	48	52	53	53	56	57	58	61	61	54	58
62	Whole numbers numeration	79	85	87	89	90	90	91	92	93	94	85	90
75	Decimals numeration	31	41	42	46	52	48	54	54	58	62	32	51
13	Number line	51	66	70	75	76	77	79	82	84	85	71	76
59	Properties odd/even	48	65	68	72	75	74	78	80	82	84	69	77
3	Properties factor	55	65	71	73	74	77	79	81	84	85	68	75
24	Average	30	45	50	48	54	57	61	61	65	70	30	55

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GRADE: SEVEN - MATHEMATICS

CLUSTER: NUMBER AND OPERATION (CONT.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
7	Commutative principles	63	79	84	86	87	89	89	89	91	93	86	86
12	Associative principles	68	82	85	87	89	89	90	91	93	94	88	89
63	Identity concept: zero	62	73	76	78	80	81	83	84	86	87	79	82
40	Identity concept: one	64	73	76	78	81	80	82	84	86	86	73	79
38	Rounding	69	77	80	82	83	83	85	85	87	88	76	83
71	Greatest common factor	41	46	48	50	50	51	52	52	57	57	51	50
21	Number patterns	61	71	74	77	79	80	81	81	84	85	76	80
81	Ordinality	56	73	75	80	81	81	83	84	87	88	78	83

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STATE REPORT
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GRADE: SEVEN - MATHEMATICS

CLUSTER: WORD PROBLEMS AND GRAPHS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
30	Simple word problems	85	89	89	91	91	91	92	93	94	94	89	93
34		69	80	83	85	86	87	88	89	90	91	82	89
44		41	50	54	54	56	56	58	59	59	62	52	59
18	Ratio and proportion	39	46	49	50	51	52	54	55	57	58	49	56
2	Inverse operation: addition to subtraction	86	91	93	93	94	94	94	95	96	96	94	94
9	Inverse operation: multiplication to division	63	75	79	80	82	84	84	85	86	88	79	83
79	Reading graphs and charts	70	85	86	90	90	90	92	92	94	94	88	92
80	Interpreting graphs and charts	55	69	71	76	76	77	78	80	82	84	73	78
82		35	44	47	50	51	53	53	55	56	59	45	52

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GRADE: SEVEN - MATHEMATICS

CLUSTER: GEOMETRY AND PERCENT

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
5	Identify polygons	86	91	92	94	94	94	95	96	96	96	92	93
77	Geometric relations	23	24	24	24	24	24	28	28	31	31	22	22
51	Circles	27	37	37	42	43	46	49	48	50	56	38	44
16	Percent of a number	37	44	48	50	53	55	58	58	63	66	43	54
64	Concept of percent	58	68	70	75	76	76	78	80	81	82	70	78

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GRADE: TEN - MATHEMATICS

CLUSTER: WHOLE NUMBERS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
1	Addition with no carrying	97	Outstanding	Overall performance in the whole numbers cluster was rated good with outstanding achievement recorded in the area of addition and subtraction with multiple places. A lower level of proficiency was observed on items involving two-digit divisors and the expression of multiples of numbers. These two items evidenced poor performance; namely, in the area of two-digit divisors with no remainder and in the area of prime factor multiples.
42		93	Good	
61	Addition with carrying	86	Good	
65		91	Good	
3	Subtraction with no borrowing	96	Outstanding	
64		97	Outstanding	
34	Subtraction with borrowing	91	Good	
37		88	Good	
32	Multiplication of two and three-digit numbers	85	Good	
67		90	Good	
6	Multiplication: zero	88	Good	
36	Division: one-digit divisor with no remainder	89	Good	
47	Division: two-digit divisor with no remainder	66	Poor	
7	Division: one and two-digit divisor with remainder	94	Good	

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GRADE: TEN - MATHEMATICS

CLUSTER: WHOLE NUMBERS (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
75		87	Good	
2	Properties odd, even	90	Good	
13	Prime factor multiple	66	Poor	
72		86	Good	
8	Rounding	86	Good	

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GRADE: TEN - MATHEMATICS

CLUSTER: FRACTIONS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
33	Equivalent fractions	71	Satisfactory	Results ranged from poor to satisfactory being about equally divided. Performance was universally poor for operations with mixed numbers and/or improper fractions, multiplication and division of fractions. Satisfactory results were accomplished on items dealing with comparison of fractions and addition or subtraction of proper fractions and improper fractions in vertical format.
51	Least common denominator	71	Satisfactory	
62	Relative size	82	Satisfactory	
11	Addition and subtraction of proper fractions in vertical format	74	Satisfactory	
66		82	Satisfactory	
4	Addition and subtraction of proper fraction in horizontal format	88	Good	
49		68	Poor	
78	Addition and subtraction of improper fractions in vertical format	71	Satisfactory	
83	Addition and subtraction of improper fractions in horizontal format	58	Poor	
16	Addition and subtraction of mixed fractions in vertical format	53	Poor	
43		52	Poor	

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GRADE: TEN - MATHEMATICS

CLUSTER: FRACTIONS (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
15	Multiplication and division of whole number by proper fraction	54	Poor	
80	Multiplication and division of whole number by mixed number	64	Poor	
18	Multiplication and division of proper fraction by proper fraction	62	Poor	
85	Multiplication and division of proper fraction by improper fraction	56	Poor	

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GRADE: TEN - MATHEMATICS

CLUSTER: DECIMALS/PERCENT

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
14	Equivalence of fractions to decimals	43	Poor	Overall performance was poor for this cluster. Students demonstrated strengths in locating decimal points (multiplication), equivalence of decimals to fractions, addition and division of decimals and changing percents to fractions. The skills relating to decimals need reinforcement especially in conversion. Weaknesses were noted in items dealing with equivalence of fractions and decimals, subtraction, multiplication, division of decimals, quotient, rounding, and conversion of percents to decimals.
31	Equivalence of decimals to fractions	78	Satisfactory	
46	Addition of decimals	77	Satisfactory	
74	Subtraction of decimals	68	Poor	
35	Multiplication of decimals	86	Good	
9	Multiplication of decimals: zero	66	Poor	
77	Division of decimal by whole number	72	Satisfactory	
21	Division of decimals with quotient less than one	56	Poor	
52	Division of decimals by a multiple of ten	54	Poor	
59	Rounding	48	Poor	
40	Conversion of percent to decimal	57	Poor	
81		52	Poor	
63	Conversion of percent to fraction	81	Satisfactory	
29	Percent of a number	58	Poor	

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GRADE: TEN - MATHEMATICS

CLUSTER: DECIMALS/PERCENT (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
57	Proportion percent	51	Poor	
90	Whole number from a percent	64	Poor	

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GRADE: TEN - MATHEMATICS

CLUSTER: ALGEBRA

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
45	Real number line	74	Satisfactory	Satisfactory performance was noted in the areas of the real number line fundamental operations with positive and negative numbers, square roots, integral exponents, identity elements, solution of first degree equations requiring one operation, and simple word problems. Weaknesses were noted in operation principles, use of a formula, first degree equations requiring two operations, combining terms, multiplying polynomials translating words to symbols, and points in a plane. The unsatisfactory performance on the multiplicative inverse item could have been the result of a poorly written question.
50	Operations	76	Satisfactory	
76		70	Satisfactory	
41	Square roots	79	Satisfactory	
24	Integer exponents	78	Satisfactory	
20	Operation principles	61	Poor	
87		55	Poor	
12	Identity elements: one and zero	84	Satisfactory	
26		80	Satisfactory	
82	Additive and multiplicative inverses	28	Unsatisfactory	
19	Formulas	50	Poor	
53	First degree equations	84	Satisfactory	
73		60	Poor	
89	Combining terms	56	Poor	
56	Multiplication of monomials	57	Poor	

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GRADE: TEN - MATHEMATICS

CLUSTER: ALGEBRA (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
30	Words to symbols	62	Poor	
58	Simple word problems	73	Satisfactory	
23	Points in a plane	54	Poor	

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GRADE: TEN - MATHEMATICS CLUSTER: GEOMETRY/MEASUREMENT

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
27	Conversion of units within the same system	76	Satisfactory	The only items completed satisfactorily involved conversion of units and geometric relations. The question on geometric relations involved parallel lines and appeared to be too easy for students at the tenth grade level. All other items were given a poor rating except the one on area and circumference of circles which was rated unsatisfactory.
44		72	Satisfactory	
79	Addition of denominate numbers with regrouping	62	Poor	
17	Subtraction of denominate numbers with regrouping	63	Poor	
48	Area measurement	41	Poor	
86	Perimeter	52	Poor	
54	Area and circumference	39	Unsatisfactory	
10	Geometric relations	93	Good	

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GRADE: TEN - MATHEMATICS

CLUSTER: PROBLEM SOLVING

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
5	Money	85	Good	Overall performance was satisfactory. Significant weak areas were consumer mathematics and ratio-proportion problems. As noted in earlier grade levels, problems requiring more than one operation showed the poorest results even when straight forward steps successfully performed in isolation elsewhere were required. Poor performance was evident where inference of the correct mathematical operation depended on reading comprehension. Verbal distractions appear not to have been clearly segregated in the course of devising solutions.
22	Temperature	87	Good	
25	Average	77	Satisfactory	
55	Ratio-proportion	61	Poor	
68		49	Poor	
38	Interpretation of data	84	Satisfactory	
39		36	Unsatisfactory	
69		95	Outstanding	
70		91	Good	
71		71	Satisfactory	
88	Consumer mathematics: interest	55	Poor	
84	Comsumer mathematics: sales tax	78	Satisfactory	
60	Consumer mathematics: discount	45	Poor	
28	Consumer mathematics: buying	61	Poor	

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COMMUNITY TYPES

GRADE: TEN - MATHEMATICS

CLUSTER: WHOLE NUMBERS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
1	Addition with no carrying	97	96	97	97	96	97	96	96	96
42		93	91	93	94	92	93	93	91	90
61	Addition with carrying	87	85	86	88	86	86	87	86	85
65		92	89	92	92	90	92	89	92	86
3	Subtraction with no borrowing	97	95	97	97	96	97	96	96	95
64		97	96	97	98	97	97	97	96	95
34	Subtraction with borrowing	92	87	92	93	91	93	89	90	84
37		89	84	90	91	88	88	87	87	83
32	Multiplication of two and three-digit numbers	86	82	86	88	84	87	84	84	78
67		91	86	91	92	90	89	89	90	85
6	Multiplication: zero	89	83	89	90	87	89	89	87	83
36	Division: one-digit divisor with no remainder	91	84	91	93	89	90	89	89	82
47	Division: two-digit divisor with no remainder	68	61	68	70	65	65	66	66	56
7	Division: one and two-digit divisor with remainder	95	91	95	96	94	94	94	94	92
75		89	81	89	90	87	88	87	85	80

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COMMUNITY TYPES

GRADE: TEN - MATHEMATICS

CLUSTER: WHOLE NUMBERS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
2	Properties: odd,even	93	80	91	94	92	88	86	87	86
13	Prime factor multiple	70	58	67	73	67	64	65	66	55
72		88	81	87	90	87	84	84	83	80
8	Rounding	89	76	88	91	88	87	85	86	81

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COMMUNITY TYPES

GRADE: TEN - MATHEMATICS

CLUSTER: FRACTIONS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
33	Equivalent fractions	75	58	74	77	72	72	68	67	59
51	Least common denominator	75	60	73	78	72	68	70	67	62
62	Relative size	88	66	85	89	84	82	77	80	74
11	Addition and subtraction of proper fractions in vertical format	79	62	76	81	75	75	74	67	67
66		85	76	84	86	82	82	81	76	77
4	Addition and subtraction of proper fractions in horizontal format	90	84	89	91	89	88	87	88	85
49		74	52	70	77	71	65	65	60	58
78	Addition and subtraction of improper fractions in vertical format	75	61	74	77	71	71	69	65	61
83	Addition and subtraction of improper fractions in horizontal format	65	42	61	69	60	54	56	50	43
16	Addition and subtraction of mixed fractions in vertical format	58	42	56	60	53	55	51	49	47
43		56	39	54	59	54	52	51	47	44
15	Multiplication and division of whole numbers by proper fractions	58	43	55	61	54	51	51	45	45

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COMMUNITY TYPES

GRADE: TEN - MATHEMATICS

CLUSTER: FRACTIONS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
80	Multiplication and division of whole numbers by mixed numbers	68	54	67	71	65	64	62	59	53
18	Multiplication and division of proper fraction by proper fraction	65	53	63	68	61	63	56	53	51
85	Multiplication and division of proper fraction by improper fraction	60	47	58	63	56	54	52	47	46

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COMMUNITY TYPES

GRADE: TEN - MATHEMATICS

CLUSTER: DECIMALS/PERCENT

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
14	Equivalence of fractions to decimals	49	29	44	53	45	40	40	37	36
31	Equivalence of decimals to fractions	82	66	80	84	79	80	76	76	73
46	Addition of decimals	82	63	78	85	80	71	73	69	68
74	Subtraction of decimals	74	55	70	77	71	64	65	61	58
35	Multiplication of decimals	89	79	88	90	86	87	85	86	82
9	Multiplication of decimals: zero	70	58	68	71	66	67	64	68	61
77	Division of decimal by whole number	75	63	74	77	71	73	68	71	62
21	Division of decimals with quotient less than one	57	54	56	59	55	55	57	57	51
52	Division of decimals by a multiple of ten	59	44	55	61	55	50	54	51	46
59	Rounding	54	35	49	57	49	47	44	44	40
40	Conversion of percent to decimal	60	50	57	61	57	59	57	55	54
81		58	37	54	59	52	54	49	52	43
63	Conversion of percent to fraction	84	71	83	85	80	83	77	79	75
29	Percent of a number	63	48	59	66	58	54	54	55	47
57	Proportion percent	55	39	51	59	52	46	46	42	39

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COMMUNITY TYPES

GRADE: TEN - MATHEMATICS

CLUSTER: DECIMALS/PERCENT (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
90	Whole number from a percent	69	52	65	72	65	59	59	59	50

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COMMUNITY TYPES

GRADE: TEN - MATHEMATICS

CLUSTER: ALGEBRA

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
45	Real number line	80	61	77	84	76	68	72	69	55
50	Operations	82	60	80	86	80	71	72	72	61
76		75	57	73	81	73	60	61	63	43
41	Square roots	83	70	82	85	80	72	74	72	70
24	Integer exponents	85	61	82	88	80	70	73	64	59
20	Operation principles	66	49	63	70	61	53	55	52	40
87		63	36	58	67	58	49	48	48	29
12	Identity elements: one and zero	88	75	86	89	84	83	82	79	75
26		84	72	81	86	81	75	77	74	67
82	Additive and multiplicative inverses	29	25	28	30	28	28	29	30	27
19	Formulas	57	33	51	61	52	46	46	42	31
53	First degree equations	88	74	87	90	85	81	83	79	75
73		67	44	63	72	62	54	53	50	39
89	Combining terms	63	43	58	66	59	49	50	50	37
56	Multiplication of monomials	63	44	59	66	58	46	48	51	36

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COMMUNITY TYPES

GRADE: TEN - MATHEMATICS

CLUSTER: ALGEBRA (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
30	Words to symbols	67	49	64	71	63	60	56	60	44
58	Simple word problems	78	59	76	82	75	70	70	70	60
23	Points in a plane	60	43	56	64	55	44	49	52	34

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COMMUNITY TYPES

GRADE: TEN - MATHEMATICS

CLUSTER: GEOMETRY/MEASUREMENT

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
27	Conversion of units within the same system	81	62	79	83	77	76	74	73	65
44		75	60	75	77	72	74	69	68	68
79	Addition of denominate numbers with regrouping	69	44	65	72	64	62	59	59	54
17	Subtraction of denominate numbers with regrouping	68	49	65	70	64	64	60	59	56
48	Area measurement	48	25	42	53	44	33	36	37	30
86	Perimeter	57	39	54	61	52	49	49	48	40
54	Area and circumference	43	31	38	47	39	35	33	37	30
10	Geometric relations	95	88	94	96	93	93	94	95	92

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COMMUNITY TYPES

GRADE: TEN - MATHEMATICS

CLUSTER: PROBLEM SOLVING

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
5	Money	86	80	86	87	85	87	83	83	80
22	Temperature	90	79	89	91	88	87	86	86	82
25	Average	83	63	81	85	79	77	74	75	66
55	Ratio-proportion	66	47	63	70	61	59	58	57	48
68		53	40	50	56	49	48	46	41	41
38	Interpretation of data	86	79	85	87	85	84	82	83	80
39		43	19	37	47	38	32	29	31	20
69		97	90	96	97	95	95	95	94	93
70		93	86	93	94	92	92	91	91	88
71		75	61	71	77	74	73	68	70	66
88	Consumer mathematics: interest	60	45	56	62	57	55	53	50	49
84	Consumer mathematics: sales tax	83	66	81	85	80	79	78	76	70
60	Consumer mathematics: discount	49	34	46	51	46	45	42	38	37
28	Consumer mathematics: buying	65	48	63	68	62	60	58	58	47

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TEN - MATHEMATICS

CLUSTER: WHOLE NUMBERS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
1	Addition with no carrying	96	96	96	96	97	97	97	97	97	97	96	97
42		91	92	92	93	93	93	93	93	94	95	90	93
61	Addition with carrying	85	86	86	86	87	87	87	87	87	88	85	84
65		89	91	90	91	91	91	92	91	92	93	86	89
3	Subtraction with no borrowing	94	96	96	96	97	97	97	97	97	97	95	96
64		96	96	96	97	97	97	98	97	98	98	95	98
34	Subtraction with borrowing	87	89	90	91	91	92	92	92	93	94	84	89
37		83	87	87	88	89	89	90	90	91	92	83	84
32	Multiplication of two and three-digit number	82	83	84	84	86	85	87	87	88	89	78	81
67		86	88	89	91	91	90	91	91	93	93	35	89
6	Multiplication: zero	82	87	87	88	89	89	90	89	90	90	83	84
36	Division: one-digit divisor with no remainder	84	87	88	90	91	90	91	92	92	93	82	88
47	Division: two-digit divisor with no remainder	60	64	65	67	68	67	68	68	68	73	56	59

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DISTRICT FACTOR GROUPINGS

GRADE: TEN - MATHEMATICS

CLUSTER: WHOLE NUMBERS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
7	Division: one and two-digit divisor with remainder	91	93	94	95	95	95	95	95	96	97	92	93
75		80	85	86	87	88	89	89	89	90	91	80	83
2	Properties odd, even	78	86	88	91	92	92	92	94	95	95	86	91
13	Prime factor multiple	57	63	63	67	67	68	70	71	71	74	55	62
72		80	83	84	86	87	87	88	89	90	91	80	85
8	Rounding	74	83	86	88	88	89	89	89	91	91	81	86

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TEN - MATHEMATICS

CLUSTER: FRACTIONS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
33	Equivalent fractions	55	66	69	72	73	73	75	76	78	80	59	71
51	Least common denominator	59	65	68	71	73	74	74	76	78	79	62	73
62	Relative size	63	76	80	85	85	87	86	87	89	91	74	86
11	Addition and subtraction of proper fractions in vertical format	61	68	72	76	77	77	77	78	82	84	67	74
66		75	78	81	84	83	83	84	85	87	88	77	83
4	Addition and subtraction of proper fractions in horizontal format	83	86	87	89	89	89	90	90	92	92	85	90
49		48	60	63	69	71	71	73	74	78	81	58	70
78	Addition and subtraction of improper fractions in vertical format	59	66	69	72	73	73	74	75	77	81	61	72
83	Addition and subtraction of improper fractions in horizontal format	39	51	54	57	61	62	64	65	69	74	43	60
16	Addition and subtraction of mixed fractions in vertical format	39	48	52	57	56	57	55	58	59	62	47	51
43		37	46	50	54	55	54	55	57	59	63	44	50
15	Multiplication and division of whole number by proper fraction	41	47	51	56	56	56	56	58	62	64	45	51

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GRADE: TEN - MATHEMATICS

CLUSTER: FRACTIONS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
80	Multiplication and division of whole number by mixed number	52	59	62	67	66	66	67	69	70	75	53	64
18	Multiplication and division of proper fraction and proper fraction	51	57	60	63	64	62	63	66	67	70	51	65
85	Multiplication and division of proper fraction by improper fraction	44	51	53	56	57	58	59	60	63	67	46	54

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DISTRICT FACTOR GROUPINGS

GRADE: TEN - MATHEMATICS

CLUSTER: DECIMALS/PERCENT

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
14	Equivalence of fractions to decimals	26	36	36	43	43	46	47	51	54	58	36	41
31	Equivalence of decimals to fractions	65	73	75	79	80	81	82	82	83	85	73	80
46	Addition of decimals	61	69	72	78	79	79	81	83	86	87	68	77
74	Subtraction of decimals	51	63	63	70	70	72	73	74	78	80	58	67
35	Multiplication of decimals	78	84	85	88	87	88	88	88	90	90	82	86
9	Multiplication of decimals: zero	57	62	63	68	68	68	69	69	72	74	61	62
77	Division of decimal by whole number	63	68	69	73	73	73	74	74	76	79	62	72
21	Division of decimals with quotient less than one	54	55	54	55	55	57	56	59	58	61	51	51
52	Division of decimals by a multiple of ten	42	50	48	54	55	58	57	60	62	65	46	52
59	Rounding	32	42	44	49	48	51	53	53	57	61	40	45
40	Conversion of percent to decimal	49	55	54	56	57	59	58	60	62	64	54	60
81		34	46	47	53	53	55	56	57	59	64	43	57
63	Conversion of percent to fraction	71	76	79	82	82	82	84	84	85	87	75	83

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DISTRICT FACTOR GROUPINGS

GRADE: TEN - MATHEMATICS

CLUSTER: DECIMALS/PERCENT (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
29	Percent of a number	47	53	54	57	57	61	61	63	65	71	47	54
57	Proportion percent	37	44	45	48	50	53	54	57	60	64	39	47
90	Whole number from a percent	49	58	59	63	65	67	67	69	72	76	50	63

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DISTRICT FACTOR GROUPINGS

GRADE: TEN - MATHEMATICS

CLUSTER: ALGEBRA

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
45	Real number line	58	68	71	74	77	77	79	81	84	85	55	73
50	Operations	56	69	72	77	79	80	82	84	87	87	61	80
76		53	60	64	70	73	72	76	79	83	85	43	74
41	Square roots	69	73	75	78	81	80	83	85	88	87	70	79
24	Integer exponents	57	70	72	78	81	83	85	86	91	90	59	83
20	Operation principles	46	52	55	60	64	63	66	68	73	74	40	58
87		32	46	48	54	58	58	63	64	69	73	29	57
12	Identity elements: one and zero	74	80	82	84	86	87	88	88	89	90	75	85
26		70	74	75	79	81	82	83	84	87	89	67	80
82	Additive and multiplicative inverses	23	25	26	26	28	28	28	30	30	34	27	25
19	Formulas	29	40	44	49	52	55	55	58	64	66	31	49
53	First degree equations	72	80	81	85	86	88	88	88	90	92	75	85
73		40	51	54	60	61	64	66	69	74	77	39	63
89	Combining terms	39	48	51	56	58	60	62	62	68	71	37	56

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DISTRICT FACTOR GROUPINGS

GRADE: TEN - MATHEMATICS

CLUSTER: ALGEBRA (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
56	Multiplication of monomials	40	47	52	55	57	60	63	65	69	69	36	61
30	Words to symbols	46	56	57	61	64	66	67	69	72	75	44	65
58	Simple word problems	57	67	69	73	76	77	78	80	81	85	60	74
23	Points in a plane	39	46	49	54	57	59	59	61	66	67	34	55

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DISTRICT FACTOR GROUPINGS

GRADE: TEN - MATHEMATICS

CLUSTER: GEOMETRY/MEASUREMENT

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
27	Conversion of units within the same system	60	72	73	76	78	80	80	81	83	86	65	74
44		58	69	71	74	74	75	75	75	76	79	68	75
79	Addition of denominate numbers with regrouping	41	55	60	64	65	67	66	69	72	75	54	67
17	Subtraction of denominate numbers with regrouping	47	58	60	65	64	66	66	68	70	73	56	66
48	Area measurement	22	31	34	40	40	44	46	50	55	59	30	44
86	Perimeter	36	48	47	50	54	53	56	58	62	66	40	52
54	Area and circumference	29	32	33	38	38	39	42	43	46	54	30	38
10	Geometric relations	87	92	92	94	94	95	95	95	96	96	92	94

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TEN - MATHEMATICS

CLUSTER: PROBLEM SOLVING

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
5	Money	80	83	85	85	86	86	86	86	88	88	80	81
22	Temperature	78	84	85	88	88	90	89	90	91	92	82	85
25	Average	59	73	75	78	81	82	82	83	85	86	66	78
55	Ratio-proportion	45	55	57	60	62	65	66	67	69	73	48	64
68		38	43	45	50	48	51	52	55	55	59	41	49
38	Interpretation of data	78	83	83	85	85	86	86	86	86	88	80	81
39		15	27	29	34	37	39	41	43	49	53	20	39
69		90	94	93	96	95	96	96	96	97	98	93	96
70		84	90	89	92	92	93	94	93	94	95	88	88
71		60	68	67	72	72	74	73	75	77	80	66	75
88	Consumer mathematics: interest	43	51	51	55	56	59	59	60	62	66	49	55
84	Consumer mathematics: sales tax	63	75	75	79	81	82	83	83	85	87	70	81
60	Consumer mathematics: discount	33	40	41	44	45	48	47	49	51	54	37	45
28	Consumer mathematics: buying	47	56	57	61	63	64	65	65	67	72	47	59

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STATE REPORT

GRADE: TWELVE - MATHEMATICS

CLUSTER: WHOLE NUMBERS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
1	Addition with no carrying	96	Outstanding	Overall performance in this cluster was good. Students demonstrated mastery on items that addressed addition and subtraction of multiple places without carrying and borrowing respectively. Good performance was also noted in these areas with carrying and borrowing as well as multiplication involving two and three-digit numbers and zeros, division of one-digit divisors with a remainder, identification of odd-even properties of numbers, and rounding. Satisfactory performance was achieved on items requiring division of two-digit divisors without a remainder and properties of numbers, In this instance, properties of numbers dealt with multiples of numbers.
61	Addition with carrying	88	Good	
65		93	Good	
3	Subtraction with no borrowing	97	Outstanding	
34	Subtraction with borrowing	93	Good	
37		92	Good	
32	Multiplication of two and three-digit numbers	89	Good	
6	Multiplication: zero	91	Good	
36	Division: one-digit divisor with no remainder	93	Good	
47	Division: two-digit divisor with no remainder	72	Satisfactory	
75	Division: one and two-digit divisor with remainder	90	Good	
2	Properties odd, even	93	Good	
13	Prime factor multiple	72	Satisfactory	
8	Rounding	91	Good	

STATE OF NEW JERSEY - DEPARTMENT OF EDUCATION
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Educational Assessment Program

STATE REPORT

GRADE: TWELVE - MATHEMATICS

CLUSTER: FRACTIONS

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
33	Equivalent fractions	78	Satisfactory	Students demonstrated a generally satisfactory performance on items that involved reducing fractions, least common denominator, relative size, and addition and subtraction of proper fractions. Weaknesses were noted on items dealing with addition and subtraction of improper fractions in horizontal form. Scores were also poor for multiplication and division of fractions.
51	Least common denominator	76	Satisfactory	
62	Relative size	88	Good	
11	Addition and subtraction of proper fractions in vertical format	78	Satisfactory	
66		84	Satisfactory	
4	Addition and subtraction of proper fraction in horizontal format	90	Good	
49		74	Satisfactory	
78	Addition and subtraction of improper fractions in vertical format	76	Satisfactory	
83	Addition and subtraction of improper fractions in horizontal format	67	Poor	
16	Addition and subtraction of mixed fractions in vertical format	59	Poor	
43		57	Poor	

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STATE REPORT

GRADE: TWELVE - MATHEMATICS

CLUSTER: FRACTIONS (Cont.)

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
15	Multiplication and division of whole number by proper fraction	56	Poor	
80	Multiplication and division of whole number by mixed number	69	Poor	
18	Multiplication and division of proper fraction by proper fraction	63	Poor	
85	Multiplication and division of proper fraction by improper fraction	59	Poor	

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STATE REPORT

GRADE: TWELVE - MATHEMATICS

CLUSTER: DECIMALS/PERCENT

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
14	Equivalence of fractions to decimals	53	Poor	Satisfactory or good results were obtained on items dealing with the basic arithmetic operations of addition, subtraction, and multiplication of decimals. Difficulties were noted when the operation involved division of decimals. Also receiving satisfactory ratings were items on converting a percent to a fraction, determining the number when the percent of it was given, and equivalence of decimals to fractions. Performance in all other categories of this cluster was rated poor; that is, equivalence of fractions to decimals, division of decimals with the quotient less than one and by a multiple of ten, rounding, conversion of percent to decimal and percent to fraction, and percent of a number.
31	Equivalence of decimals to fractions	82	Satisfactory	
46	Addition of decimals	80	Satisfactory	
74	Subtraction of decimals	74	Satisfactory	
35	Multiplication of decimals	90	Good	
9	Multiplication of decimals: zero	74	Satisfactory	
77	Division of decimal by whole number	78	Satisfactory	
21	Division of decimals with quotient less than one	64	Poor	
52	Division of decimals by a multiple of ten	63	Poor	
59	Rounding	59	Poor	
40	Conversion of percent to decimal	64	Poor	
81		60	Poor	
63	Conversion of percent to fraction	84	Satisfactory	

STATE REPORT

GRADE: TWELVE - MATHEMATICS

CLUSTER: DECIMALS/PERCENT (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
29	Percent of a number	68	Poor	
57	Proportion percent	59	Poor	
90	Whole number from a percent	72	Satisfactory	

STATE OF NEW JERSEY - DEPARTMENT OF EDUCATION
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STATE REPORT

GRADE: TWELVE - MATHEMATICS

CLUSTER: ALGEBRA

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
45	Real number line	84	Satisfactory	Performance in this cluster ranged from unsatisfactory to good with the majority of the items rated as either poor or satisfactory. Good achievement was noted in the skill areas of square roots, additive identity, and solution of first degree equations. More emphasis is indicated in operation principles, substitution and evaluation of formulas, combining similar terms, translation from words to symbols, location of points in the coordinate plane, and the multiplicative inverse.
50	Operations	82	Satisfactory	
76		74	Satisfactory	
41	Square roots	85	Good	
24	Integer exponents	81	Satisfactory	
20	Operation principles	67	Poor	
87		64	Poor	
12	Identity elements: one and zero	89	Good	
26		82	Satisfactory	
82	Additive and multiplicative inverses	36	Unsatisfactory	
19	Formulas	61	Poor	
53	First degree equations	89	Good	
89	Combining terms	63	Poor	
30	Words to symbols	69	Poor	
58	Simple word problems	80	Satisfactory	
23	Points in a plane	63	Poor	

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STATE REPORT

GRADE: TWELVE - MATHEMATICS

CLUSTER: GEOMETRY/MEASUREMENT

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
27	Conversion of units within the same system	82	Satisfactory	This cluster consists basically of concepts which are taught several times during the student's elementary school years. In particular, the performance should have been higher on measurement. However, the geometric concepts may have been forgotten by many of the students who have not had but one year of mathematics in the past three years. Also, many students begin algebra in the eighth grade and, therefore, have geometry for their last time in their freshman year which leaves three years from any concentration. Poorest performance was noted in sum of angles of a triangle, basic application of Pythagorean theorem, and angle and area measurement.
44		81	Satisfactory	
79	Addition of denominate number with regrouping	74	Satisfactory	
17	Subtraction of denominate numbers with regrouping	73	Satisfactory	
7	Angle measurement	67	Poor	
48	Area measurement	54	Poor	
86	Perimeter	64	Poor	
54	Area and circumference	49	Poor	
72	Types of angles	83	Satisfactory	
73		78	Satisfactory	
10	Geometric relations	96	Outstanding	
67	Sum angles of triangle	57	Poor	
56	Pythagorean theorem	58	Poor	

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STATE REPORT

GRADE: TWELVE - MATHEMATICS

CLUSTER: PROBLEM SOLVING

ITEM NO.	CLUSTER-SPECIFICATION	PER CENT CORRECT TOTAL	ITEM SPECIFICATION COMMENTS	CLUSTER COMMENTS
5	Money	90	Good	Overall performance in this cluster was viewed as satisfactory to good for the majority of items. The responses to the item requiring a reading from a bar graph was deemed outstanding. Performance in consumer mathematics was satisfactory to good with lesser proficiency observed on problems involving two-step computation or fractional percents.
42		86	Good	
22	Temperature	90	Good	
25	Average	83	Satisfactory	
55	Ratio, proportion	70	Satisfactory	
68		63	Poor	
38	Interpretation of data	89	Good	
39		48	Poor	
69		96	Outstanding	
70		94	Good	
71		78	Satisfactory	
88	Consumer mathematics: interest	65	Poor	
84	Consumer mathematics: sales tax	86	Good	
60	Consumer mathematics: discount	58	Poor	
28	Consumer mathematics: buying	70	Satisfactory	
64		54	Poor	

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STATE REPORT

COMMUNITY TYPES

GRADE: TWELVE - MATHEMATICS

CLUSTER: WHOLE NUMBERS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
1	Addition with no carrying	97	96	97	97	96	96	97	98	95
61	Addition with carrying	88	87	89	89	88	88	88	88	85
65		93	91	93	93	93	92	93	93	89
3	Subtraction with no borrowing	97	96	97	97	97	97	96	97	96
34	Subtraction with borrowing	94	91	94	94	93	92	93	91	89
37		92	89	93	93	92	92	90	92	86
32	Multiplication of two and three-digit numbers	90	88	90	90	88	88	88	89	82
6	Multiplication: zero	92	88	92	92	92	91	92	89	88
36	Division: one-digit divisor with no remainder	94	90	93	94	92	92	91	92	87
47	Division: two-digit divisor with no remainder	73	69	74	74	70	72	72	72	64
75	Division: one and two-digit divisor with remainder	91	87	91	91	90	89	90	90	84
2	Properties: odd/even	95	88	94	95	95	93	92	93	89
13	Prime factor multiple	75	64	73	76	73	70	69	69	62
8	Rounding	94	84	92	93	92	90	91	89	87

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COMMUNITY TYPES

GRADE: TWELVE - MATHEMATICS

CLUSTER: FRACTIONS

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
33	Equivalent fractions	81	68	80	83	79	78	75	75	68
51	Least common denominator	79	69	78	81	77	73	76	73	66
62	Relative size	91	79	89	91	90	89	86	88	82
11	Addition and subtraction of proper fractions in vertical format	81	70	79	82	78	74	73	70	66
66		87	79	85	88	84	82	81	83	78
4	Addition and subtraction of proper fractions in horizontal format	91	86	91	91	90	88	89	88	86
49		79	63	76	81	75	70	71	69	61
78	Addition and subtraction of improper fractions in vertical format	79	69	78	81	76	73	73	70	65
83	Addition and subtraction of improper fractions in horizontal format	72	55	68	75	67	65	65	62	50
16	Addition and subtraction of mixed fractions in vertical format	62	50	62	63	59	56	60	56	49
43		60	48	59	63	58	54	56	53	47
15	Multiplication and division of a whole number by proper fraction	59	48	57	63	56	52	51	49	40

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COMMUNITY TYPES

GRADE: TWELVE - MATHEMATICS

CLUSTER: FRACTIONS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
80	Multiplication and division of a whole number by mixed number	72	61	72	74	69	69	66	66	56
18	Multiplication and division of a proper fraction by proper fraction	66	58	65	68	62	60	56	59	49
85	Multiplication and division of a proper fraction by improper fraction	62	51	60	64	59	56	55	51	44

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COMMUNITY TYPES

GRADE: TWELVE - MATHEMATICS

CLUSTER: DECIMALS/PERCENT

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
14	Equivalence of fractions to decimals	58	39	55	62	54	45	51	47	42
31	Equivalence of decimals to fractions	85	75	84	86	83	80	81	83	77
46	Addition of decimals	84	70	81	85	83	76	77	74	73
74	Subtraction of decimals	77	64	75	80	76	70	72	71	65
35	Multiplication of decimals	91	86	91	91	90	90	89	89	87
9	Multiplication of decimals: zero	76	67	75	77	74	72	72	73	68
77	Division of decimal by whole number	81	73	80	81	77	78	78	79	69
21	Division of decimals with quotient less than one	65	61	65	66	62	61	64	66	55
52	Division of decimals by a multiple of ten	66	53	64	69	63	57	62	63	53
59	Rounding	63	47	60	67	59	57	58	58	50
40	Conversion of percent to decimal	66	58	64	68	64	62	64	68	59
81		65	48	62	67	62	58	61	59	51
63	Conversion of percent to fraction	86	77	86	87	85	82	81	84	79
29	Percent of a number	71	59	70	73	68	65	66	64	59
57	Proportion percent	64	47	60	67	61	57	57	57	50

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STATE REPORT

COMMUNITY TYPES

GRADE: TWELVE - MATHEMATICS

CLUSTER: DECIMALS/PERCENT (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
90	Whole number from a percent	76	62	74	78	74	70	70	69	62

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STATE REPORT

COMMUNITY TYPES

GRADE: TWELVE - MATHEMATICS

CLUSTER: ALGEBRA

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
45	Real number line	87	76	86	89	86	79	82	78	72
50	Operations	86	70	84	88	84	76	79	75	69
76		78	65	76	82	76	67	67	60	52
41	Square roots	87	77	86	89	86	78	82	76	75
24	Integer exponents	85	70	83	88	82	72	77	69	64
20	Operation principles	71	59	68	75	69	59	62	60	45
87		70	50	66	74	67	59	61	55	38
12	Identity elements: one and zero	91	83	90	92	90	86	87	86	82
26		85	77	83	87	83	77	81	80	70
82	Additive and multiplicative inverses	39	29	36	43	37	34	33	37	27
19	Formulas	66	46	62	71	62	56	56	51	40
53	First degree equations	91	82	90	92	90	88	88	88	83
89	Combining terms	68	51	64	71	65	58	59	59	44
30	Words to symbols	73	59	71	75	71	64	66	67	53
58	Simple word problems	84	70	82	86	82	80	80	76	70

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STATE REPORT

COMMUNITY TYPES

GRADE: TWELVE - MATHEMATICS

CLUSTER: ALGEBRA (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
23	Points in a plane	67	54	64	72	64	52	58	55	40

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STATE REPORT

COMMUNITY TYPES

GRADE: TWELVE - MATHEMATICS

CLUSTER: GEOMETRY/MEASUREMENT

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
27	Conversion of units within the same system	85	73	83	86	84	80	81	79	74
44		83	72	83	83	82	79	80	78	79
79	Addition of denominate numbers with regrouping	80	60	77	80	76	73	73	73	66
17	Subtraction of denominate numbers with regrouping	77	63	75	78	74	69	72	66	65
7	Angle measurement	73	52	69	76	70	58	60	57	52
48	Area measurement	60	37	55	65	56	46	48	45	43
86	Perimeter	69	51	64	71	64	61	64	60	53
54	Area and circumference	53	37	50	58	49	45	44	44	38
72	Types of angles	87	73	84	89	84	74	78	79	75
73		82	70	78	83	79	76	75	74	70
10	Geometric relations	97	93	96	97	96	94	96	95	95
67	Sum angles of triangle	64	41	59	69	59	47	47	45	37
56	Pythagorean theorem	63	46	58	65	57	56	58	57	47

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STATE REPORT

COMMUNITY TYPES

GRADE: TWELVE - MATHEMATICS

CLUSTER: PROBLEM SOLVING

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
5	Money	91	88	91	91	90	90	91	88	87
42		89	80	88	89	88	89	88	88	80
22	Temperature	92	85	91	92	91	88	90	91	85
25	Average	86	72	85	87	84	82	82	82	73
55	Ratio-proportion	74	59	72	76	70	67	69	68	60
68		68	52	64	70	64	60	63	60	51
38	Interpretation of data	89	86	89	90	89	85	87	89	85
39		56	30	49	59	51	44	46	43	31
69		97	94	97	97	97	97	97	97	95
70		95	91	94	95	94	92	94	95	91
71		82	70	79	82	80	80	79	83	74
88	Consumer mathematics: interest	69	56	67	70	65	63	64	64	57
84	Consumer mathematics: sales tax	89	78	88	89	88	86	86	87	78
60	Consumer mathematics: discount	61	48	59	63	58	55	57	52	47
28	Consumer mathematics: buying	74	61	73	75	71	70	71	68	59

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COMMUNITY TYPES

GRADE: TWELVE - MATHEMATICS

CLUSTER: PROBLEM SOLVING (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	0	1	2	4	5	6	7	8	9
64	Consumer mathematics: buying	59	42	56	61	55	51	52	50	40

STATE OF NEW JERSEY - DEPARTMENT OF EDUCATION
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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - MATHEMATICS

CLUSTER: WHOLE NUMBERS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
1	Addition with no carrying	96	96	96	96	96	97	97	97	97	97	95	97
61	Addition with carrying	87	88	88	88	88	88	88	89	88	89	85	89
65		91	92	92	93	93	93	94	93	94	94	89	92
3	Subtraction with no borrowing	96	96	97	97	97	97	97	97	97	97	96	96
34	Subtraction with borrowing	91	92	92	93	93	93	94	94	94	95	89	92
37		89	90	91	92	92	93	93	93	93	93	86	91
32	Multiplication of two and three-digit numbers	88	88	88	89	89	90	89	90	91	91	82	81
6	Multiplication: zero	88	90	90	92	92	92	92	92	93	93	88	92
36	Division: one-digit divisor with no remainder	90	91	92	93	93	93	93	93	94	95	87	93
47	Division: two-digit divisor with no remainder	69	71	72	72	73	73	72	72	74	75	64	66
75	Division: one and two-digit divisor with remainder	86	88	89	90	90	91	92	90	92	93	84	91
2	Properties odd, even	86	91	93	94	94	95	95	95	96	96	89	92
13	Prime factor multiple	62	69	69	72	72	75	74	75	77	78	62	68

STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - MATHEMATICS

CLUSTER: WHOLE NUMBERS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
8	Rounding	82	89	90	93	92	93	93	93	94	94	87	93

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - MATHEMATICS

CLUSTER: FRACTIONS

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
33	Equivalent fractions	66	73	75	78	79	80	81	82	84	85	68	79
51	Least common denominator	67	72	74	76	77	79	77	80	83	83	66	72
62	Relative size	77	85	86	89	88	90	91	90	92	93	82	88
11	Addition and subtraction of proper fractions in vertical format	68	72	75	78	78	79	79	81	85	85	66	72
66		79	81	82	85	85	86	85	86	88	89	78	83
4	Addition and subtraction of proper fractions in horizontal format	85	89	87	91	89	90	91	91	92	93	86	90
49		61	67	70	73	74	77	77	79	83	84	61	75
78	Addition and subtraction of improper fractions in vertical format	68	72	74	76	76	78	78	79	82	83	65	72
83	Addition and subtraction of improper fractions in horizontal format	52	61	62	65	66	70	70	72	77	79	50	65
16	Addition and subtraction of mixed fractions in vertical format	48	55	57	61	60	61	61	61	65	67	49	56
43		45	53	55	58	59	59	59	61	64	66	47	55
15	Multiplication and division of whole number by proper fraction	46	49	52	55	54	58	58	60	65	67	40	47

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - MATHEMATICS

CLUSTER: FRACTIONS (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
80	Multiplication and division of whole number by mixed number	59	65	67	69	69	71	71	73	75	77	56	67
18	Multiplication and division of proper fraction by proper fraction	57	58	61	64	62	64	64	65	69	71	49	53
85	Multiplication and division of proper fraction by improper fraction	49	54	55	58	58	60	61	62	67	69	44	56

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - MATHEMATICS

CLUSTER: DECIMALS/PERCENT

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
14	Equivalence of fractions to decimals	36	46	47	51	53	57	56	59	65	67	42	47
31	Equivalence of decimals to fractions	73	79	80	83	83	85	84	85	87	88	77	83
46	Addition of decimals	68	74	76	80	81	82	83	84	87	87	73	74
74	Subtraction of decimals	62	69	69	75	75	76	77	78	81	83	65	67
35	Multiplication of decimals	85	88	89	91	90	91	91	90	92	92	87	88
9	Multiplication of decimals: zero	67	69	71	75	74	75	75	76	79	79	68	69
77	Division of decimal by whole number	74	76	77	77	79	80	80	79	82	83	69	77
21	Division of decimals with quotient less than one	61	62	61	62	63	64	64	65	67	68	55	67
52	Division of decimals by a multiple of ten	50	58	60	62	63	65	65	67	70	72	53	59
59	Rounding	44	54	55	58	59	61	61	63	67	70	50	59
40	Conversion of percent to decimal	58	61	61	63	64	68	65	65	68	70	59	61
81		45	55	55	61	61	65	63	64	68	73	51	57
63	Conversion of percent to fraction	76	80	82	85	85	86	86	86	88	90	79	82

STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - MATHEMATICS

CLUSTER: DECIMALS/PERCENT (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
29	Percent of a number	58	63	64	66	67	70	69	73	75	77	59	63
57	Proportion percent	45	52	54	58	59	62	62	64	69	71	50	60
90	Whole number from a percent	60	68	68	71	72	76	75	76	79	81	62	71

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STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - MATHEMATICS

CLUSTER: ALGEBRA

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
45	Real number line	74	79	81	85	85	86	87	89	91	91	72	84
50	Operations	65	76	78	82	82	85	86	87	90	90	69	82
76		62	65	68	72	74	76	78	81	86	87	52	70
41	Square roots	76	79	81	82	84	86	87	90	91	92	75	87
24	Integer exponents	66	73	76	81	81	85	84	87	91	91	64	82
20	Operation principles	56	60	62	65	67	69	70	72	78	80	45	62
87		45	57	58	63	65	68	69	72	77	79	38	61
12	Identity elements: one and zero	81	86	88	89	90	90	91	91	93	93	82	88
26		75	78	78	81	82	84	84	86	88	89	70	79
82	Additive and multiplicative inverses	27	33	32	33	35	38	38	40	44	47	27	40
19	Formulas	41	53	54	58	61	64	65	69	74	76	40	54
53	First degree equations	81	87	87	89	89	91	91	92	93	93	83	89
89	Combining terms	48	57	56	61	63	66	66	70	73	76	44	60
30	Words to symbols	55	65	65	68	70	73	72	74	78	78	53	70

STATE OF NEW JERSEY - DEPARTMENT OF EDUCATION
Division of Research, Planning and Evaluation
Educational Assessment Program

STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - MATHEMATICS

CLUSTER: ALGEBRA (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
58	Simple word problems	67	76	77	80	80	83	84	85	87	88	70	82
23	Points in a plane	51	54	56	61	63	66	65	70	74	76	40	63

STATE OF NEW JERSEY - DEPARTMENT OF EDUCATION
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Educational Assessment Program

STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - MATHEMATICS

CLUSTER: GEOMETRY/MEASUREMENT

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
27	Conversion of units within the same system	70	78	80	82	83	84	84	86	88	88	74	78
44		70	78	81	82	81	83	82	83	84	84	79	80
79	Addition of denominate numbers with regrouping	57	69	73	76	76	79	77	78	81	82	66	84
17	Subtraction of denominate numbers with regrouping	61	69	72	75	73	77	75	76	78	81	65	77
7	Angle measurement	48	58	61	64	68	69	71	75	79	82	52	67
48	Area measurement	33	43	45	50	54	57	57	63	68	70	43	55
86	Perimeter	48	57	58	61	64	67	67	69	73	76	53	65
54	Area and circumference	35	42	42	46	50	52	51	56	59	63	38	46
72	Types of angles	70	76	78	83	83	85	86	88	91	92	75	88
73		68	74	72	77	78	79	80	81	85	86	70	75
10	Geometric relations	92	95	94	96	96	96	97	97	97	97	95	95
67	Sum angles of triangle	37	47	49	53	57	60	62	67	72	76	37	58
56	Pythagorean theorem	43	54	52	56	57	61	59	63	67	69	47	53

STATE OF NEW JERSEY - DEPARTMENT OF EDUCATION
Division of Research, Planning and Evaluation
Educational Assessment Program

STATE REPORT
DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - MATHEMATICS

CLUSTER: PROBLEM SOLVING

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
5	Money	87	90	90	91	90	92	91	91	92	92	87	91
42		79	85	85	87	87	88	88	88	89	90	80	89
22	Temperature	84	88	89	91	90	92	92	91	93	93	85	90
25	Average	70	79	81	83	84	85	85	87	88	89	73	82
55	Ratio-proportion	56	65	68	70	71	74	73	75	77	79	60	66
68		50	57	59	62	62	68	66	69	71	75	51	57
38	Interpretation of data	86	88	87	88	88	89	89	90	90	91	85	87
39		24	40	41	47	48	53	53	57	61	65	31	46
69		94	96	96	97	96	97	97	97	97	98	95	97
70		90	93	93	94	94	95	95	95	95	96	91	96
71		68	76	75	79	78	81	81	81	82	84	74	79
88	Consumer mathematics: interest	54	63	62	63	65	68	67	68	71	74	57	65
84	Consumer mathematics: sales tax	76	84	84	86	87	89	89	88	89	91	78	86
60	Consumer mathematics: discount	47	53	54	56	58	61	59	62	64	66	47	53

STATE REPORT

DISTRICT FACTOR GROUPINGS

GRADE: TWELVE - MATHEMATICS

CLUSTER: PROBLEM SOLVING (Cont.)

ITEM NO.	CLUSTER SPECIFICATION	A	B	C	D	E	F	G	H	I	J	V	Z
28	Consumer mathematics: buying	60	67	68	70	71	73	73	73	75	78	59	69
64		38	49	50	53	54	58	57	60	63	67	40	52

EVALUATION FORM

1. **How thoroughly did you read this report?**

___ Scanned it
___ Read parts of it
___ Read most of the report
___ Read the entire report thoroughly

2. **In general, how readable did you find the report?**

___ Only slightly readable
___ Highly readable

3. **Will the information presented in this report be helpful to you in your work?**

___ Very helpful
___ Somewhat helpful
___ Not at all helpful

4. **Would you recommend this report to a colleague?**

___ Yes, definitely
___ In some instances
___ Probably not

5. **After reading this report, will you read other reports or seek additional information about the performances of New Jersey students in the areas of reading and mathematics?**

___ Probably
___ Only if time or opportunity permit
___ Probably not

6. **Was the format easy to follow? In other words, was it easy to find the information you wanted?**

___ Very easy
___ Fairly easy
___ Fairly difficult
___ Very difficult

7. **What is your impression of the overall appearance of the reports (tables, type size, headings, general layout)?**

___ Excellent
___ Good
___ Fair, but needs some modification
___ Poor, needs extensive modification

Do you have additional comments?

THANK YOU FOR YOUR HELP!

Please return this form to:

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N.J. State Department of Education
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Trenton, New Jersey 08625